Exhibit H

SG

Cowen & Co.

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United States

Semiconductors

Power Integrations

Initiating Coverage

Power Semiconductor Innovator

Conclusion: Continued growth in high-volume power supply markets, a strong IP portfolio, and a capital-efficient fabless business model make Power Integrations well positioned to take advantage of the accelerating adoption of power conversion chips. Currently, our comparable valuation analysis suggests that Power Integrations' shares already trade at an appropriate premium to peers on several metrics. Likewise, our DCF analysis suggests that the shares are currently fairly valued. We would encourage ownership near 20.0x our 2005 EPS estimate--an entry point we believe offers the appropriate return potential relative to execution risk.

- **Solid Revenue Growth.** We expect impressive revenue growth of approximately 24% in 2004 and 17% in 2005 and beyond. Growth is being derived from (1) the proliferation of portable electronic devices, (2) the ongoing migration from linear transformer and discrete component power supplies toward integrated solutions, and (3) the worldwide groundswell of "Green Power" initiatives, at both the commercial and government levels.
- **Near-Term ROIC Improvement.** We expect ROIC to improve materially to 32.5% in 2004 and 37.8% in 2005, primarily driven by enhanced top-line performance. Power Integrations has a strong history of intelligent stewardship pertaining to shareholder capital.
- **Quality Company, But Stock Appears Fairly Valued.** POWI shares currently trade near 25.0x our 2005 EPS estimate, and 3.1x next year's estimated revenue. While in a historical context on a price-to-sales basis the stock appears inexpensive, we would look for a modest pull-back from current levels to around 20.0x 2005 EPS before accumulating a position. We are also somewhat challenged to identify a near-term event that would cause a material upward revision to our forecast.

POWI (07/13)	**$22.77**
Mkt cap	**$744.6MM**
Dil shares out	32.7MM
Avg daily vol	418.1K
52-wk range	$21.4-42.8
Dividend	Nil
Dividend yield	Nil
BV/sh	$6.02
Net cash/sh	$3.64
Debt/cap	NA
ROIC (LTM)	32.5%
3-yr fwd EPS growth	25.0%
S&P 500	**1115.1**

Revenue $MM

FY	2003	2004E		2005E	
Dec	Actual	Prior	Current	Prior	Current
Q1	29.1	—	34.2A	—	42.5
Q2	29.8	—	36.1	—	43.5
Q3	34.5	—	42.1	—	47.5
Q4	32.3	—	44.1	—	49.0
Year	125.7	—	156.3	—	182.5
CY	—	—	—	—	—
EV/S	—	—	3.6x	—	3.1x

EPS $

FY	2003	2004E		2005E	
Dec	Actual	Prior	Current	Prior	Current
Q1	0.13	—	0.16A	—	0.21
Q2	0.13	—	0.15	—	0.21
Q3	0.15	—	0.22	—	0.25
Q4	0.16	—	0.23	—	0.26
Year	0.57	—	0.76	—	0.93
CY	—	—	—	—	—
P/E	—	—	30.0x	—	24.5x

Please refer to the back of this report for important disclosures.

Investment Thesis

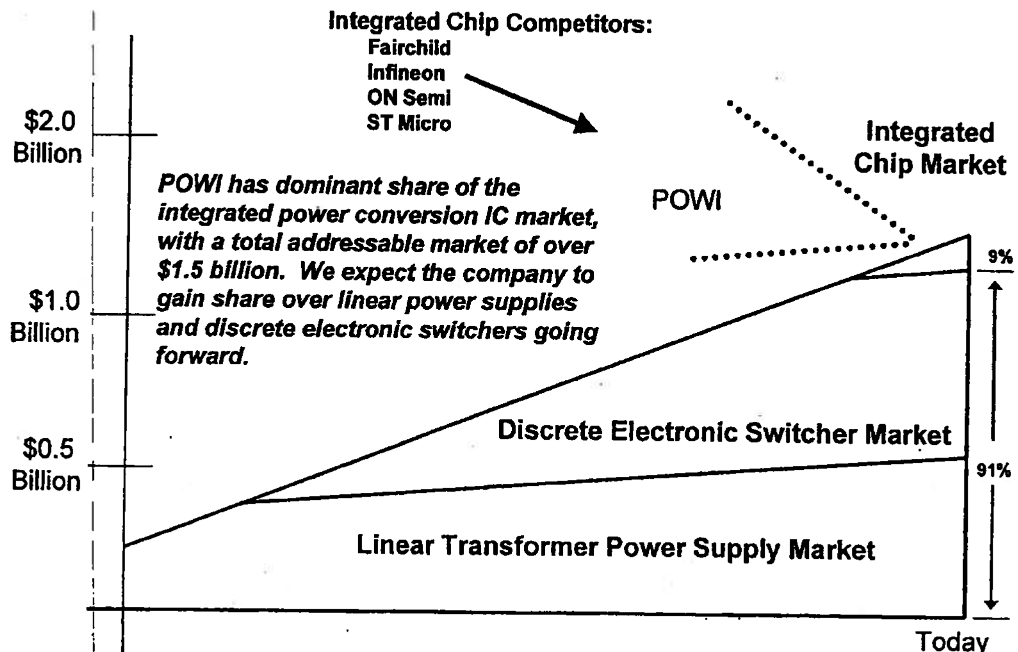
Power Integrations is currently benefiting from the accelerating adoption of power conversion integrated circuits (ICs) used in power supply applications. These semiconductors offer manufacturers a reduced bill-of-materials and lower shipping costs, and are integral to improving the power efficiency of commodity power converters and chargers. A majority of the power supply market is still dominated by first-generation linear power supplies and second-generation discrete electronic switching power supplies. Consequently, a sizable opportunity exists for power conversion IC companies such as Power Integrations, as the benefits of silicon integration are increasingly being recognized by consumer electronics OEMs and merchant power supply manufacturers.

We believe sales of portable electronic devices, which require external chargers, are adding disproportionately to this growth. In 2002, it is estimated that 600 million portable electronics devices were sold worldwide, including cellular phones, notebook computers, PDAs, and portable audio devices. We expect this number to grow about 7% compounded annually through 2008, fueling the demand for external chargers. Due to market share gains over linear transformer power supplies and discrete electronics switchers, Power Integrations' business should grow considerably faster than both the consumer electronics and portable device markets.

It is estimated that over 400 million new power supplies (internal and external) are sold in the United States each year, and that worldwide about 2 billion new units are shipped annually. We believe over 10 billion power supplies exist around the globe, with the average home in developed countries using 5 to 10 wall cubes and internal power supplies. However, less than 25% of the installed base of power supplies meets pending commercial and government requirements for electronics energy efficiency. Thus, we feel Power Integrations has a substantial opportunity for many years, as the world migrates to more efficient, integrated power supplies, to conserve both operating and standby electrical power.

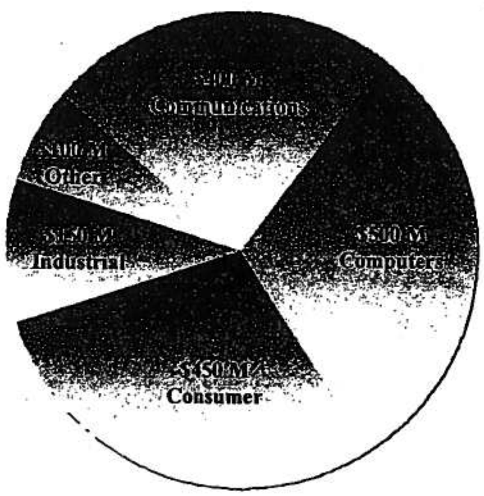
Power Integrations' Opportunity is Substantial

Linear transformer and discrete electronic power supplies dominate the landscape to date



Source: SG Cowen & Co., Power Integrations

Power Integrations market opportunity by end-market



Source: SG Cowen & Co., Power Integrations

Industry Overview

Every electronic device requires direct current (DC) power for operation. However, because of the inherent inefficiencies in transporting and distributing bulk DC power, electric utilities generate and distribute alternating current (AC) power for residential and industrial use. Thus, every electronic device with a wall plug requires specialized circuitry—either integrated or external—for converting AC power to DC power. This process likewise entails transforming system voltages—usually from the receptacle voltage (120 volts AC in the U.S.) to one or more lower voltages (usually between 1 and 12 volts DC). Circuits that perform these conversions are loosely referred to as power supplies (PS), and the most visible of these devices are wall cubes used to power or charge a multitude of consumer electronics appliances—cordless phones, DSL modems, mobile phones, etc. Although not readily visible, there also exist power supplies in personal computers, television sets, LCD monitors, and most "white good" appliances.

With the advent of mass-market electronics many decades ago, so-called linear power supplies (LPS) evolved as mainstay power conversion devices. The LPS employs a large steel or iron laminated transformer, the output of which is rectified by diodes, and conditioned by large electrolytic capacitors. Thereafter, a regulating power transistor (behaving like a variable resistor) "drops" any excess voltage to deliver the desired output. Here, any unneeded electrical energy is converted to heat, even if the electrical device is turned off.

With the introduction of high-voltage discrete semiconductors and controllers in the 1970s, so-called switched-mode power supplies (SMPS) began to supplant LPS in many applications. In the SMPS, the input wall voltage is rectified and smoothed by diodes and capacitors, creating a high-voltage DC. This signal is then converted to a lower voltage using a small ferrite transformer and a MOSFET transistor controlled by a pulse-width modulator (PWM) circuit. In general, SMPS are preferred over LPS for many applications due to their higher efficiency, smaller size and lower weight. SMPS are, however, more expensive than LPS.

Over the past 30-plus years, discrete-component SMPS have reached commodity status, and they have a multitude of applications in every segment of electronics. However, relative to other electronic devices that have enjoyed dramatic advances due to higher levels of integration and improved process technologies (e.g.,—mobile phones, microprocessors), SMPS have been slow to realize the benefits of semiconductor ICs. This was principally due to the absence of a cost-effective, high-voltage IC solution for SMPS applications. Presently, the limitations of discrete, commodity SMPS are well understood. Discrete SMPS have an extensive bill-of-materials (upwards of 80 components), which limits improvements in size, functionality and electrical efficiency. Also, discrete switchers involve a higher level of design complexity, which limits scalability, and increases time-to-market.

In the mid-1990s to improve SMPS manufacturability and performance, cost-effective semiconductor ICs became available for power supply applications. These IC's most often integrate a high-voltage MOSFET transistor, with feedback, oscillation and pulse-width modulation (PWM) controller circuitry. In general, SMPS using these ICs are easier to design, have approximately one-half the parts count, and exhibit improved electrical efficiency.

Catalysts

Owing to intellectual property barriers, the trend toward energy efficient electronics, and the migration away from discrete component power supplies, we think Power Integrations is one of the more compelling secular stories among small capitalization technology companies. Catalysts related to Power Integrations' operations include:

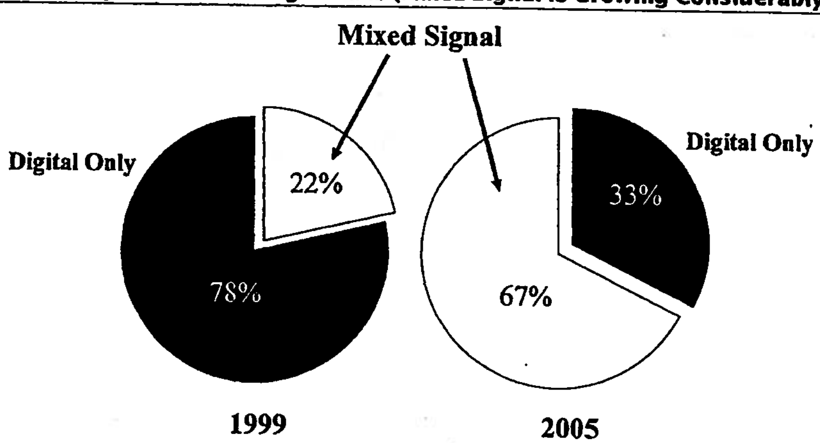
1. Power Integrations' proprietary core technology—monolithic integrated circuit solutions for converting electrical power, is disruptive in nature with compelling efficiency and functional advantages. Here, we believe the ongoing migration from linear transformer and discrete-based power conversion devices toward integrated solutions will only accelerate over the next several years. Also, over the last year, copper prices have nearly doubled, and iron prices have risen considerably, making the cost of large linear transformers much less compelling. Likewise, the lead times on many discrete components used in legacy switching power supplies have stretched.
2. New product introductions, particularly LinkSwitch, are expanding the company's served market, and all the company's products maintain solid intellectual property barriers.
3. The proliferation of commercial Green Power initiatives worldwide is driving the use of Power Integrations' solutions, both domestically and abroad. Government mandates are also a catalyst for product sales. In late February, the Environmental Protection Agency's ENERGY STAR segment published new eligibility criteria for external power supplies. In essence, the new draft specification targets single-voltage external AC-DC power supplies, which are required by laptop computers, cordless and cellular phones, portable stereos, and many other consumer and office products. The specification endeavors to establish power-efficiency requirements for power supplies within the range of 0 to 180 watts, and, when adopted, will essentially eliminate the use of legacy, linear transformer power supplies for ENERGY STAR-compliant products. The specification is expected to be finalized in the summer of 2004. We believe this initiative is extremely positive for Power Integrations in that the company's integrated circuits (ICs) are specifically engineered to enable alternative, energy-efficient designs for AC-DC power supplies. The U.S. ENERGY STAR specification also complements specifications provided in the European Code of Conduct scheduled to take effect on January 1, 2005, which articulates specific energy-efficient criteria for European consumer electronics. Also, Intel recently endorsed enhanced power efficiency requirements for PC power supplies, in affiliation with ENERGY STAR. This proposed specification validates Power Integrations' solution for low standby power consumption for PCs (we believe POWI chips are in 30-35% of all PC standby power supplies), and it is in line with the President's Executive Order 13221, which mandates that U.S. government agencies purchase electronic equipment that consumes no more than 1 watt of energy in standby power mode. IBM, HP, Dell, NEC, and Sony each currently comply with E.O. 13221 using the Power Integrations solution.

The Fabless Mixed-Signal (FMS) Business Model

We prefer fabless mixed-signal (FMS) IC companies like Power Integrations over many other companies within the semiconductor industry. The strength of these companies' product offerings is derived principally from the integration of many analog and digital circuits on the same chip, which allows for a more functional and cost-effective solution. Also, FMS companies enjoy many of the desirable features attributable to high-performance analog companies while avoiding the shortcomings of more digital-oriented peers. Advantages of the FMS business model include the following:

1. The FMS IC industry is not as capital- and fixed-cost-intensive as the integrated device manufacturer (IDM) segment (both analog and digital), which facilities higher returns on invested capital. Also, because FMS designs do not require extremely high levels of miniaturization relative to their digital counterparts, FMS IC fabrication can take place using older (trailing-edge), larger-geometry equipment. Similar-functionality mixed-signal ICs (MSICs) may also be manufactured on different line-width platforms, allowing outsourced foundries increased flexibility. This leads to more favorable pricing and higher margins.
2. There is significant intellectual property protection in the MSIC market, and MSIC design expertise is scarce, owing to a strong dependence on work experience. Here, rather than rely on process technology, most successful mixed-signal products rely on expert analog and digital circuit design, high levels of systems integration, the development of complex, hardware-specific software, and an elegantly engineered solution.
3. Due to their higher levels of functionality, MSICs often enjoy longer product cycles than less-integrated chips (typically three to five years or more vs. one-to two years for highly-digital ICs). This is because once a particular MSIC is designed into an electronic device, significant reengineering is generally required to supplant existing chip functionality. This is especially true of proprietary MSICs, where pin configurations are product-specific, and where product upgrades can sometimes be performed with software/firmware upgrades rather than entire chip redesigns. Also, MSICs are less likely to undergo the same magnitude of price erosion associated with purely digital semiconductors, as switching costs are significant.

Percentage of WW IC Design Starts (Mixed-Signal Is Growing Considerably)



Source: SG Cowen & Co., Mentor Graphics

Valuation

We have a favorable opinion of Power Integrations' business model, and we believe the company's stock can likely sustain its premium valuation, consistent with firms that steadfastly deploy capital such that returns considerably exceed costs. We also believe that execution risks associated with current returns are moderate, owing to solid secular trends and a favorable cyclical backdrop for semiconductors. We likewise feel Power Integrations' forward growth rate will be in line or superior to semiconductor industry comparables. On an intrinsic basis, our DCF analysis suggests the shares are fairly valued at around $24.00. Our relative comparable analysis suggests the shares trade at a modest premium. We would encourage accumulating a position near 20.0x our 2005 EPS estimate of $0.93.

Discounted Cash Flow Multistage Model

To facilitate our analysis, we use a multistage DCF model. We divide Power Integrations' life cycle into three distinct periods: the near term (2004-06), the transition period (2007-36), and the terminal value. As with any DCF analysis, the resulting stock price is highly sensitive to the underlying assumptions. In the following section, we discuss the assumptions used in each period.

Present Value of Future Cash Flows

Near-Term: '04 - '06	$69,250
Transition: '07 - '36	$556,017
Terminal Period	$54,392
Total cash flow	$679,659
+ Cash and securities	145,175
- Fixed obligations	$0
Equity Value	**$824,834**
Shares outstanding	34,125
Price Per Share	**$24.17**

Source: SG Cowen & Co.

Near Term: 2004–06

The near-term forecast is based on our revenue and earnings estimates for 2004-06. We expect revenue growth of 24% in 2004, 17% in 2005, and 17% in 2006, driven by the proliferation of power conversion integrated chips, as well as market share gains over linear chargers and discrete electronics switchers. Due to ongoing price pressures in the consumer electronics marketplace, we believe EBIT margins will peak next year, followed by a few years of flattish operating margins.

Transition: 2007-36

The transition period represents Power Integrations' competitive advantage period (CAP). During the CAP, a firm can generate returns in excess of its cost of capital. Although we project high returns, we expect Power Integrations' growth rate to begin to decelerate during the CAP. However, due to high levels of intellectual property, we think the CAP can be longer for Power Integrations than for many comparable firms. We forecast sales growth of 17% during 2007-11, which we believe will decline to 5%

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by the end of the CAP. Similarly, we expect operating margin erosion in the second half of the CAP, as competition increases among power conversion IC vendors, and intellectual barriers subside. We project Power Integrations' operating margin will decline from 23% in 2006 to 12% by the end of the CAP.

Terminal Period

We use a terminal growth assumption of 4% depicting a scenario where intense competition leads to commodity-like pricing, and returns are reduced due to lower cash flows.

Assumptions For Discounted Cash Flow Model

Period	2004	2005	2006	2007 - 2011	2012 - 2016	2017 - 2021	2022 - 2026	2027-2031	2032-2036	Terminal
Sales growth	24%	17%	17%	17%	15%	15%	10%	7%	5%	4%
EBIT margin	22%	23%	23%	23%	23%	21%	17%	15%	12%	10%
Tax rate	28%	25%	25%	25%	25%	23%	20%	20%	20%	20%
Dep. as a % of sales	5%	5%	5%	4%	4%	4%	3%	3%	3%	3%
Capex as a % of sales	5%	5%	5%	5%	5%	5%	4%	4%	4%	3%
WC as a % of sales	14%	11%	10%	9%	9%	9%	7%	6%	6%	6%

Source: SG Cowen & Co.

Weighted Average Cost Of Capital

We calculate a weighted average cost of capital of 14.2%. Our estimate is based on the company's current capital structure, which we believe is a reasonable approximation of the company's target capital structure.

Weighted Average Cost of Capital

% Equity	100%
% Debt	0%
Risk-free Rate	5%
Beta	1.7
Risk Premium	6%
Cost of Equity	**14.2%**
Interest	0.0%
Cost of Debt	**0.0%**
WACC	**14.2%**

Source: SG Cowen & Co.

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Relative Valuation

Compared with other mixed-signal and high-performance analog semiconductor companies, Power Integrations' shares trade at a modest premium on many metrics. We believe this reflects the company's solid growth, strong intellectual property, and favorable ROIC. Although there doesn't appear to be compelling price opportunity at current share levels, we believe that if augmented enthusiasm returns to small-capitalization technology stocks, Power Integrations' shares will demonstrate positive sensitivity to the company's current growth prospects (over 40% operating earnings growth). On a historical price-to-forward-sales basis, the shares appear to be trending toward their historical low of around 4.0x.

Comparable Analysis (intraday)

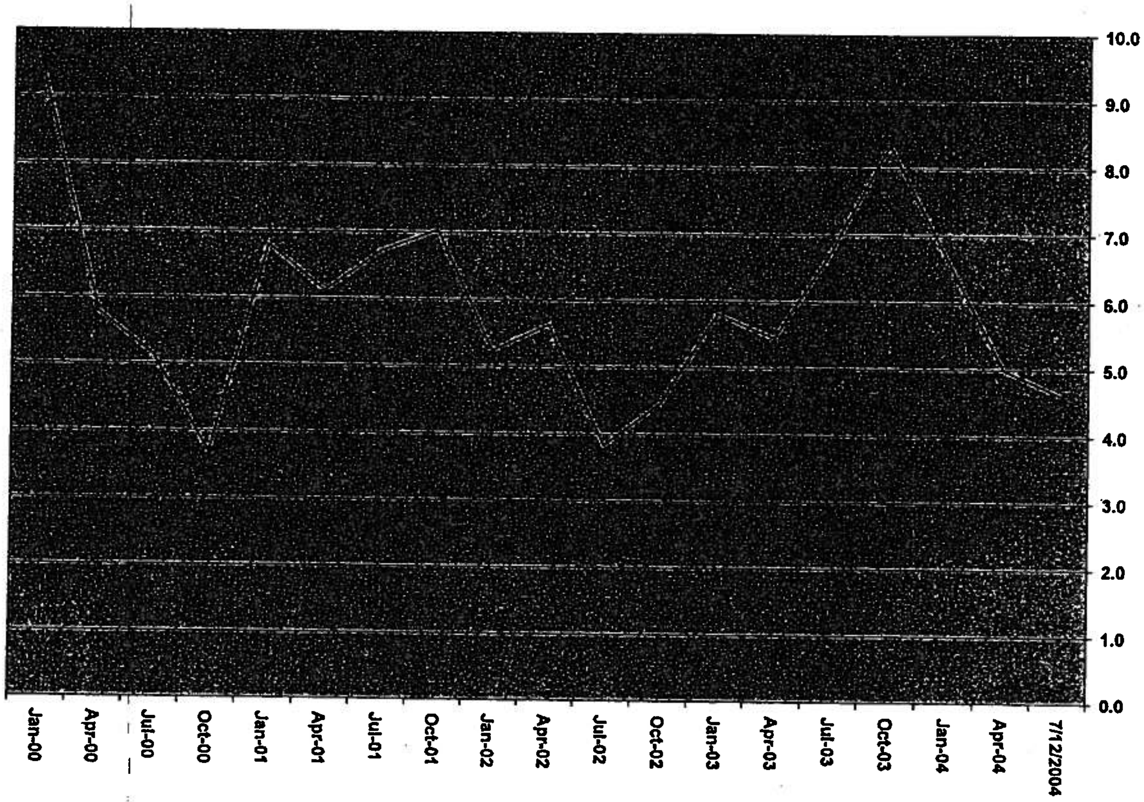
Semiconductor Companies Comparable Valuation Table

($ in millions, except per share data)		FY End	Price 7/13/04	Market Value (1)	Enterprise Value (2)	EV/Rev CY04E	EV/Rev CY05E	P/E CY04E	P/E CY05E	LT Growth
Analog Devices	ADI	Nov	$42.72	$16,785	$14,243	4.7x	3.6x	23.3x	17.1x	35.3%
Fairchild Semiconductor	FCS	Dec	$13.33	$1,589	$1,892	1.1x	1.0x	12.9x	8.4x	20.0%
Intersil	ISIL	Dec	$17.52	$2,467	$1,716	2.9x	2.4x	20.5x	17.7x	19.4%
Linear Technology	LLTC	Jun	$37.54	$12,069	$10,421	10.9x	8.3x	30.9x	24.0x	36.0%
Maxim	MXIM	Jun	$47.97	$16,990	$15,901	9.3x	7.0x	32.6x	24.0x	35.8%
Microchip	MCHP	Mar	$26.46	$5,472	$4,997	5.8x	4.9x	25.2x	20.8x	24.0%
National Semiconductor	NSM	May	$18.99	$7,395	$6,624	3.0x	2.5x	17.9x	15.0x	24.2%
Texas Instruments	TXN	Dec	$22.42	$39,988	$36,680	2.8x	2.2x	20.6x	14.4x	30.7%
MEDIAN						3.8x	3.0x	21.9x	17.4x	
AVERAGE						5.0x	4.0x	23.0x	17.7x	
AMIS Holdings, Inc.	AMIS	Dec	$15.15	$1,247	$1,385	2.6x	2.3x	21.0x	15.9x	15.0%
Cirrus Logic	CRUS	Mar	$5.11	$431	$238	1.0x	0.8x	102.2x	16.5x	30.0%
Integrated Circuit Systems	ICST	Jun	$24.49	$1,777	$1,594	5.5x	4.9x	22.3x	20.4x	20.0%
Micrel	MCRL	Dec	$9.88	$912	$773	2.7x	2.0x	27.5x	14.4x	34.5%
Microsemi	MSCC	Sept	$13.13	$780	$742	3.0x	3.3x	35.5x	34.6x	25.0%
O2 Micro	OIIM	Dec	$13.94	$545	$421	4.1x	3.5x	28.4x	20.8x	30.0%
Power Integrations	**POWI**	**Dec**	**$22.77**	**$700**	**$582**	**3.7x**	**3.2x**	**30.0x**	**24.5x**	**25.0%**
SigmaTel	SGTL	Dec	$23.25	$894	$772	5.0x	3.9x	21.9x	24.2x	30.0%
Semtech	SMTC	Jan	$20.63	$1,534	$1,377	5.0x	3.9x	23.3x	16.9x	25.0%
Silicon Labs	SLAB	Dec	$41.77	$2,155	$1,960	3.9x	3.3x	26.1x	22.8x	30.0%
Sipex	SIPX	Dec	$4.61	$152	$133	1.8x	1.3x	-15.9x	57.6x	20.0%
Zoran Corp	ZRAN	Dec	$15.31	$654	$529	1.4x	1.1x	23.6x	15.5x	25.0%
ESS Technologies	ESST	Dec	$9.20	$362	$220	0.7x	0.5x	12.4x	9.9x	25.0%
MEDIAN						3.0x	3.2x	23.6x	20.4x	
AVERAGE						3.1x	2.6x	27.6x	22.6x	

(1) Market value is defined as the current stock price times the number of fully diluted shares outstanding.
(2) Enterprise value is defined as fully diluted market value plus debt, plus minority interests, plus preferred stock, less cash and cash equivalents.

CRUS, OIIM, POWI, SGTL ratios are based on SG Cowen estimates.
Source: SG Cowen & Co.

POWI Historical Price to Forward Sales Ratio



Source: SG Cowen & Co.

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Power Integrations Has Solid ROIC Prospects

As a function of strong secular growth and respectable operating margin, coupled with a less capital-intensive fabless business model, Power Integrations' forecast ROIC is expected to improve dramatically in the near term, approaching 38% exiting 2005.

POWI Return on Invested Capital

$000s	2001	2002	2003	2004E	2005E
Adjusted EBIT:	$7,907	$12,016	$24,117	$40,839	$45,867
+Implied interest from operating leases	1,700	2,200	1,200	-	-
+Increase in LIFO reserve	-	-	-	-	-
+Increase in bad debt reserve	-	-	-	-	-
+Increase in net capitalized R&D	-	-	-	-	-
Amortization (adjusted EBIT excludes amortization)	-	-	-	-	-
Adjusted Operating Profit Before Taxes	$9,607	$14,216	$25,317	$40,839	$45,867
Income tax expense:	$2,930	$4,103	$7,033	$9,782	$10,566
- Increase in deferred tax liabilities	-	-	-	-	-
+ Increase in deferred tax assets	-	-	-	-	-
+ Tax benefit from interest expense	-	-	-	-	-
-Tax expense from interest income	(612)	(583)	(351)	(411)	(420)
-Taxes on non-operating income	-	-	-	-	-
+ Tax benefits from interest on leases	595	770	420	-	-
Cash Operating Taxes	$2,913	$4,290	$7,102	$9,372	$10,146
NOPAT	$6,694	$9,926	$18,215	$31,467	$35,721
Book value of common equity	$123,302	$140,633	$190,718	$220,555	$252,505
+Preferred stock	-	-	-	-	-
+Minority interest	-	-	-	-	-
+Deferred tax liabilities	-	-	-	-	-
+LIFO reserve	-	-	-	-	-
+Accumulated amortization expense	-	-	-	-	-
+Interest-bearing short-term debt	-	-	-	-	-
+Long-term debt	-	-	-	-	-
+Capitalized lease obligations	-	-	-	-	-
+PV of operating leases (1)	24,286	31,429	17,143	-	-
-Excess cash, cash equivalents & securities	(52,894)	(98,409)	(94,964)	(123,633)	(158,094)
-Deferred tax assets	-	-	-	-	-
Invested Capital	$94,694	$73,653	$112,897	$96,922	$94,411
Return On Invested Capital	7.1%	13.5%	16.1%	32.5%	37.8%
-Goodwill, net	-	-	-	-	-
-Intangible assets, net	-	-	-	-	-
Return On Invested Capital, ex. GW + Intang.	7.1%	13.5%	16.1%	32.5%	37.8%

Invested Capital:	2001	2002	2003	2004E	2005E
Working capital, excl. cash, cash equivalents & securities	23,971	10,991	20,356	21,543	20,162
Cash, cash equivalents & securities	76,865	109,400	115,320	145,175	178,255
Excess cash, cash equivalents & securities	$52,894	$98,409	$94,964	$123,633	$158,094

EBIT = Earnings Before Taxes and Interest
NOPAT = Net Operating Profit After Tax
ROIC = Return On Invested Capital

(1) The company purchased its primary facility in 2003, eliminating lease obligations.
Source: SG Cowen & Co.

Company Description and Products

Founded in 1988 and with an IPO in 1997, Power Integrations is a fabless semiconductor company headquartered in San Jose, California. The company designs and markets high-voltage mixed-signal power conversion ICs, principally used in electronic power supplies. Power supplies that employ Power Integrations' products generally possess a lower cost profile, have richer features, and are more manufacturable. The company's products also allow superior designs over both linear transformer and discrete electronic power supplies, by enabling fewer total parts and enhanced electrical efficiency. Approximately 82% of Power Integrations' revenue comes from Asia, and the company's largest customers include components distributors and consumer electronics OEMs/ODMs. Since 1994, the company has sold over 1 billion of its ICs worldwide.

Power Integrations possesses significant intellectual property pertaining to device structure, IC fabrication, and circuit/systems design. The company currently holds 81 U.S. patents, and we believe important competitive advantages are derived from products that integrate high-voltage transistors with CMOS and bipolar components, in a small silicon footprint.

Although Power Integrations maintains a proprietary process, the company outsources semiconductor wafer fabrication, IC manufacturing, and packaging. As such, the company is predominantly focused on the design, final testing, and sale of its ICs. At present, Power Integrations provides mask sets to semiconductor manufacturers OKI and Matsushita in Japan. The semiconductor products are then assembled and packaged by independent subcontractors in China, Malaysia, and the Philippines, and sent to the Power Integrations facility for final testing and inspection.

The company's principal IC segments include the TOPSwitch, TinySwitch, LinkSwitch, and DPA-Switch families.

TOPSwitch

Power Integrations' TOPSwitch family was first introduced in 1994, and consists of TOPSwitch, TOPSwitch II (1997), TOPSwitch-FX (2000) and TOPSwitch-GX (2000). The key benefits TOPSwitch products bring to power supply design, compared to discrete switchers, include fewer components, reduced size, enhanced functionality, and lower cost in most applications. As with all the company's ICs, these products cost-effectively integrate a PWM controller, high-voltage MOSFET transistor, and a number of other electronic components. Power Integrations' EcoSmart technology is comprised of circuitry that dramatically reduces the power consumption of electronic devices in stand-by mode.

TOPSwitch	The original monolithic, 3-terminal power conversion IC.
TOPSwitch II	A lower-cost version of the original TOPSwitch, with cost-reduced packaging.
TOPSwitch-FX	Operating at up to 75 watts, this IC incorporates the EcoSmart technology.
TOPSwitch-GX	Operating at up to 290 watts, this IC incorporates EcoSmart technology, as well as user-configurable features.

TinySwitch

The TinySwitch family was introduced in 1998 and was designed to address low power applications below 10 watts. The TinySwitch family of high-voltage ICs was the first segment to incorporate EcoSmart technology. TinySwitch products significantly reduce the energy consumed during standby and no-load operation, enabling customers to meet commercial and governmental energy efficiency guidelines.

TinySwitch	First IC to incorporate EcoSmart, operating at 10 watts or below.
TinySwitch-II	Introduced in March 2001, this IC offers lower system costs, and operates at up to 23 watts. This product is used for devices complying with Energy Star, E.O. 13221 and the European Union EC Conduct Code.

LinkSwitch

The LinkSwitch IC family was introduced in 2002 and is designed to economically displace low power (0 to 3 watts) linear transformer adapters and battery chargers. LinkSwitch enables a highly compact charger design, which offers lighter weight and enhanced energy efficiency relative to bulky, linear transformer devices. The LinkSwitch family incorporates EcoSmart technology, and can be used in chargers for cell phones, cordless phones, PDAs, digital cameras, and MP3/portable audio devices. LinkSwitch enables:

1. Up to 75% lighter power supply designs, which greatly reduces shipping costs
2. Up to 70% reduction in power dissipation. With no load and 265 volts AC input, LinkSwitch consumes less than 300 milliwatts of power
3. LinkSwitch meets Blue Angel, Energy Star, and European EC requirements

DPA-Switch

The DPA-Switch IC family was introduced in 2002 and is the first monolithic high voltage switching power chip designed for DC-DC converters and distributed power architectures (up to 100 watts). The DPA-Switch allows designers to eliminate up to 50 external components from the design of a typical discrete DC-DC converter. Applications for DPA-Switch include network and telecommunication line cards, PC servers, and DC-DC converter modules.

Distributed power architecture (DPA) is an ongoing trend in electronic subsystem design, where the application-specific AC-DC central power supply is eliminated in favor of a standard AC-DC front end. To distribute power from the device's coarsely-regulated DC bus, off-the-shelf DC-DC power modules (converters) are used. The adoption of DPA results in greater use of standard DC-DC converters, and is ideally suited to managing power at increasingly lower voltages (through the use of point-of-load conversion techniques off the main power bus). DPA brings power conversion closer to IC loads, and addresses the need for improved regulation and faster transient response.

Company Sales By Product Family

	2004 Company Estimate	2003 Actual	2002 Actual
TOPSwitch I/II (legacy products)	12%	19%	33%
TOPSwitch FX/GX	20%	29%	22%
TinySwitch I/II	50%	50%	44%
Other (LinkSwitch for AC-DC at 0-3 watts and DPA-Switch for DC-DC up to 100 watts):	8%	2%	1%

Source: SG Cowen & Co.

End-Markets

All Power Integrations product families leverage the same core intellectual property. However, a key strength of the company's business model is that its products are sold into very diverse end markets. The company reports sales in four areas—communications, consumer, computer, and industrial. Key end-products within these segments include:

1. **Cellular Phone Chargers.** In the cellular phone market, size, portability and energy efficiency are key market drivers. A substantial opportunity exists for small, energy efficient mobile phone battery chargers.
2. **Desktop Computer Standby Power Supplies.** Governmental authorities and large corporations are pressuring computer manufacturers to reduce stand-by power consumption. Power Integrations' TOPSwitch and TinySwitch products are currently being used in computers to reduce the power consumed when idle. In 2003, revenue derived from computers grew by 23%.
3. **DVD Players.** Products such as DVD players, which are off most of the time, can end up consuming more energy when off than when in operation. Power Integrations' EcoSmart ICs dramatically reduce this standby waste. The company's TinySwitch-II product cost effectively reduces the standby energy waste in many DVD models to less than one watt. In 2003, revenue derived from DVD players grew by 43%.
4. **Cable and Direct Broadcast Satellite Set-top Boxes.** Cable and direct broadcast satellite decoder box manufacturers are sensitive to component count, box size and product design cycles. Power Integrations' TOPSwitch products are currently used in set-top box applications, enabling greater energy efficiency and reduced product footprint. In 2003, revenue derived from set-top boxes nearly doubled.

Other end-products which demonstrated impressive growth in 2003 included home appliances, which grew by 37%, and industrial electronics, which grew 59% from the prior year.

Company Sales By End Market

	2004 Company Estimate	2003 Actual	2002 Actual
Communication (mostly mobile phone chargers)	34%	36%	43%
Consumer (set-top boxes, home appliances, DVD players, TV standby applications)	30%	28%	23%
Computer (mostly PC standby power supplies and LCD monitors)	24%	22%	21%
Industrial (uninterruptible power supplies, motor controls)	8%	8%	6%
Other	4%	6%	7%

Source: SG Cowen & Co., Power Integrations

Competition

Power Integrations faces competition on three fronts—from linear transformer power supplies, from discrete electronics switched-mode power supplies, and from vertically-integrated competitors seeking to mimic Power Integrations' products.

Linear power supplies (LPS). For low power charger applications LPS still dominate the worldwide market, due to historically low cost, and the absence of competition from an integrated chip solution. However, the advantages of the LPS have eroded considerably. Recently, the cost of a LPS has risen substantially due to increasing copper and iron prices. Also, the 2002 introduction of Power Integrations' LinkSwitch offered the first cost-competitive alternative to low power linears. Here, we believe LinkSwitch has "category killer" potential. Due to the inherent size and efficiency benefits of integrated electronic switchers, we believe the secular decline experienced by LPS should accelerate dramatically over the next few years.

Discrete electronics switched-mode power supplies (SMPS). Non-integrated, or discrete electronics SMPS, have steadily taken market share from LPS over the past several decades, especially at higher power levels. However, these devices have a high parts count, and are less efficient than power supplies that employ power conversion ICs. In steady fashion, SMPS using power conversion ICs are proliferating. This is largely driven by the rise in discrete semiconductor prices as well as lengthening transistor lead times. In this context, Power Integrations' ICs are generally at price parity with discrete solutions, while offering easier designs and enhanced features.

(Not so) fast followers. Power Integrations is experiencing competition from hybrid chips (ICs with separate transistor die and controller die in the same package), as well as monolithic solutions similar to TOPSwitch. Current competitors include ON Semiconductor, ST Microelectronics, Fairchild Semiconductor, Infineon, and Philips. We believe that the most interesting competitors are Fairchild and ST Microelectronics, due to their level of chip integration and growing customer base. It is noteworthy that Fairchild purchased Samsung's Semiconductor Power Device Division in 1999, which enabled the company to gain some traction at Samsung and Samsung's merchant power supply vendors (e.g. Dong Yang).

Competititors and Products

Competitor	Product Family
Fairchild Semiconductor	FSDH0165 chip, hybrid and monolithic solutions, BCDMOS
ST Microelectronics	VIPer Family; 12A & 22A chips; monolithic solution
On Semiconductor	NCP10XX Family; monolithic solution;
Philips	GreenChip controller; requires external MOSFET, BCDMOS
Infineon	CoolSET Family; requires external MOSFET

Source: SG Cowen & Co.

Power Integrations' Technology Advantage

Power Integrations has two noteworthy intellectual property advantages over its competitors. One is circuit/systems specific and the other is device structure specific.

Power Integrations has successfully defended its TOPSwitch circuit patent against Motorola, and in 1999 the company was awarded $32.3 million in patent infringement damages. In this regard, we believe that Power Integrations is the only company that can legally produce power supply controller ICs with as few as three terminals (pins), forcing competitors to use less efficient and more expensive "work-arounds" to accomplish similar functionality. Power Integrations' chips also make multiple uses of the same pins, lowering total pin count and packaging costs.

As previously mentioned, Power Integrations' products integrate a high voltage MOS field-effect transistor (HVMOSFET) with extensive power supply controller circuitry. While forgoing the engineering explanation, it is desirable to construct an HVMOSFET having a high breakdown voltage and a low "on-state" resistance. To accomplish this, many companies utilize a BCDMOS manufacturing process, which enables a monolithic IC solution (high voltage and low voltage transistors on the same chip). However, monolithic chips employing this method are more expensive to manufacture, and competing ICs require more high voltage transistor silicon area. Here, Power Integrations uses a patented transistor structure founded on buried, multiple lateral conduction layers, which we believe offers an important cost advantage. In essence Power Integrations' IP allows for a more compact HVMOSFET transistor, manufactured using a standard CMOS process. This proprietary device structure, coupled with the ability to employ a standard digital CMOS process (5V one metal, one poly CMOS, using 11 masks at 3 micron) significantly reduces the chip area, which lowers costs by allowing more ICs per wafer. Power Integrations' device structure patents have been successfully upheld, most recently in the context of Infineon.

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Power Integrations

The Original TOPSwitch Patent (Note the Inventor is CEO Balu Balakrishnan)

US005313381A

United States Patent [19]

Balakrishnan

[11] Patent Number: 5,313,381

[45] Date of Patent: May 17, 1994

[54] THREE-TERMINAL SWITCHED MODE POWER SUPPLY INTEGRATED CIRCUIT

[75] Inventor: Balu Balakrishnan, Saratoga, Calif.

[73] Assignee: Power Integrations, Inc., Mountain View, Calif.

[21] Appl. No.: 938,704

[22] Filed: Sep. 1, 1992

[51] Int. Cl.[5] H02M 1/00

[52] U.S. Cl. 363/147; 363/21; 363/97; 363/131

[58] Field of Search 363/20, 21, 97, 131, 363/147

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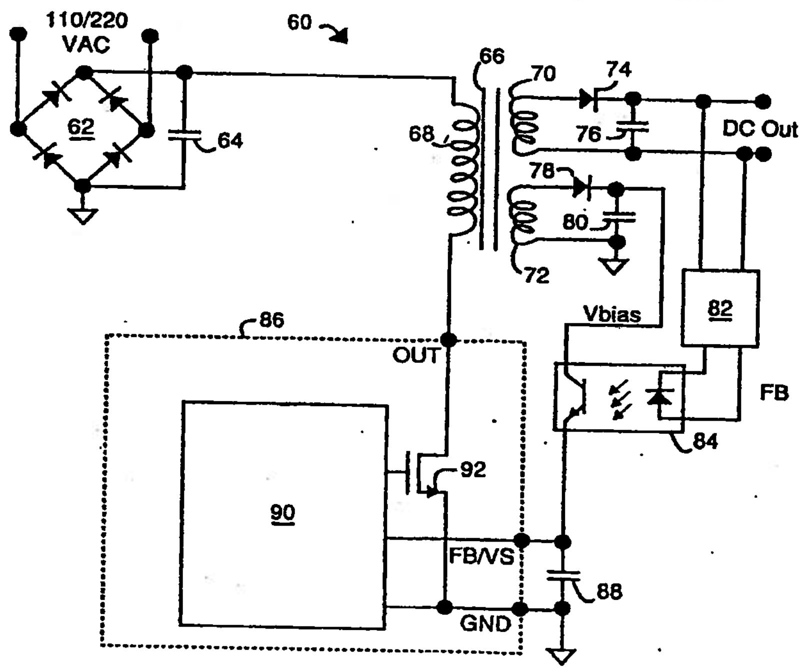
Primary Examiner—Jeffrey L. Sterrett
Attorney, Agent, or Firm—Thomas E. Schatzel

[57] ABSTRACT

An embodiment of the present invention is a three-terminal switched mode power supply chip with a signal terminal for accepting a combination of a feedback control signal and bias supply voltage to operate the chip. A feedback extraction circuit separates the feedback signal from the power supply voltage within the chip by sensing the excess current flowing through a shunt regulator.

11 Claims, 3 Drawing Sheets

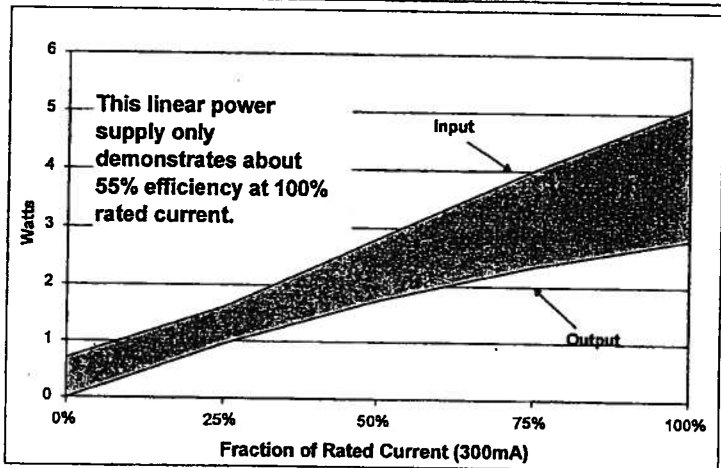


Source: SG Cowen & Co., U.S. Patent and Trademark Office

The Need for Power Efficient Electronics

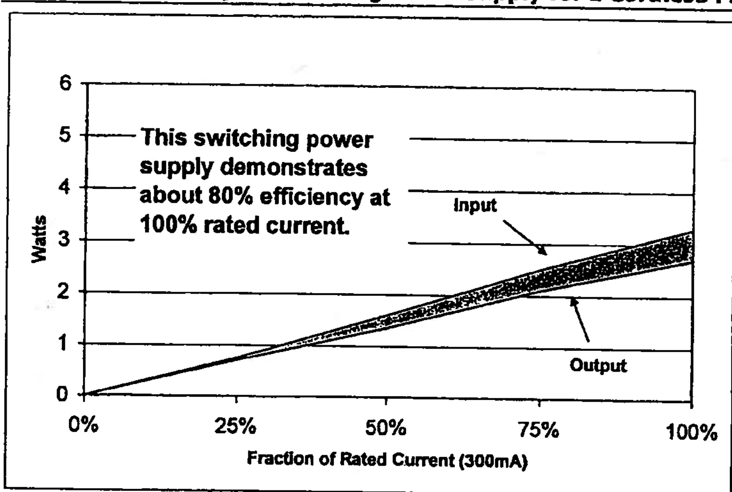
Lawrence Berkeley National Laboratory estimates that low power mode appliances (i.e., electronic devices in standby mode) are responsible for 10% of all electricity use in California homes. Here, linear power supplies consume energy even when not in use, and are likewise inefficient during operation. Switching power supplies are much more efficient during operation, and when they take advantage of intelligent power conversion ICs (e.g., Power Integrations products), they use dramatically less energy in low power or standby mode.

Power Consumed by 9V Linear Power Supply for a Cordless Phone



Source: SG Cowen & Co., U.S. EPA

Power Consumed by 9V Switching Power Supply for a Cordless Phone



Source: SG Cowen & Co., U.S. EPA

Recent Developments

In the March quarter, Power Integrations continued to have a high level of design wins with its GX and TS-II products, and had promising design activity related to LinkSwitch (in particular, a new Japanese mobile phone manufacturer) and DPA-Switch. Sales from the communications segment were up 24% from Q4, and shipments to Samsung and Motorola were sequentially up, and at the high end of company expectations (implying recent inventory issues at both of these customers have been resolved). Revenues from the consumer segment were up modestly from Q4 and up 47% yr./yr. We consider this very encouraging, considering that March is typically a seasonally weak quarter for consumer electronics. Consumer segment sales were driven by end products such as set-top boxes, DVD players, and home appliances (white goods). Sales from the computer segment were down sequentially in Q1 (in line with seasonal expectations) but were up 10% yr./yr. Similar to recent quarters, strength in this segment is being driven by ongoing market penetration into LCD monitors and PC standby power supplies.

Company Outlook and Model Implications

For Q2 2004 Power Integrations guided for a 2-6% sequential increase in revenue and EPS of $0.14-0.15. Here, we believe revenue guidance is slightly above prior Street expectations. Gross margin, on the other hand, is expected to be down materially (in the area of 46%), resulting from a strengthening of the Japanese yen relative to the U.S. dollar, as well as expected lower overhead absorption in Q2 as the company works through finished goods inventory. Power Integrations has the goal of improving turns to about 4x in the near term, and expects gross margin to return to corporate average levels in H2:04. The company reiterated guidance for 2004, when it expects revenue to be in the $150-160 million range, with EPS of $0.70 to $0.80. Gross margin for 2004 is expected to be in the 47-49% range.

Risk Factors

Power Integrations has certain risk factors that are company specific. There also exist many risk factors that are common to the semiconductor industry in general. These risks include the following:

1. Competition in the consumer-oriented semiconductor market is severe. Power Integrations faces competition from several companies, including IDMs such as ON Semiconductor, ST Microelectronics, and Fairchild Semiconductor. These competitors are well capitalized, with substantial technical and marketing resources. Power Integrations' products also face competition from alternative technologies, including linear transformer and discrete switching power supplies.

2. In the MSIC industry, chips often undergo a lengthy design-in and qualification process, and OEMs/ODMs typically subject critical components to an extensive qualification process prior to placing volume orders. Once a manufacturer decides to use a particular vendor's IC, the chip is designed into the finished good, often using a proprietary socket. IC vendors whose products are not designed-in are locked out until the introduction of a next-generation, lower-priced, or more functional end-product. Even then, manufacturers are reluctant to design entirely new components into their equipment, as this can involve significant engineering efforts.

3. If demand for consumer electronics devices such as mobile phones and PCs declines, Power Integrations' revenues and profits will be adversely impacted. In 2003, nearly 30% of Power Integrations' business was mobile phone-related, and over 20% of sales were PC-related. Also, the consumer electronics market can be highly cyclical as a function of new connectivity, microprocessor, and memory technology, and the demand for these products is also seasonal due to holiday purchases.

4. Power Integrations depends on third-party suppliers to provide it with wafers for its products, and the company has supply arrangements with Oki and Matsushita. Power Integrations is subject to periodic renegotiations regarding the pricing of semiconductor wafers, which may impact company gross margin. Currently, conventional wisdom is that due to manufacturing capacity constraints resulting from increasing demand, fabless companies will undergo some form of wafer price increases. Power Integrations may not be able to pass these price increases on to customers.

5. Power Integrations sells its products based on continuous purchase orders, rather than long-term contracts. The MSIC business is largely turns-based, rather than backlog-based. Power Integrations customers can cancel or reschedule orders on very short notice, or discontinue purchasing products at any time. Also due to occasional inventory builds at many of its customers, it is extremely difficult to predict the size, timing or terms of incoming purchase orders.

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Forecasts And Estimates

Power Integrations Annual Income Statement (Adjusted)

($000s)	2001	2002	2003	2004E	2005E
REVENUE	$94,095	$108,184	$125,706	$156,315	$182,500
% Change Y/Y	NA	15.0%	16.2%	24.3%	16.8%
TOTAL COGS	$51,252	$60,723	$62,814	$81,712	$95,568
GROSS PROFIT	$42,843	$47,461	$62,892	$74,603	$86,933
Gross Margin	45.5%	43.9%	50.0%	47.7%	47.6%
R&D	$14,471	$14,705	$16,443	$17,057	$18,334
% Sales	15.4%	13.6%	13.1%	10.9%	10.0%
Sales & marketing	$14,485	$14,537	$15,484	$16,779	$19,355
% Sales	15.4%	13.4%	12.3%	10.7%	10.6%
G&A	$5,980	$6,203	$6,848	$7,003	$8,178
% Sales	6.4%	5.7%	5.4%	4.5%	4.5%
TOTAL OPEX	$34,936	$35,445	$38,775	$40,839	$45,867
OPERATING PROFIT	$7,907	$12,016	$24,117	$33,764	$41,066
Operating Margin	8.4%	11.1%	19.2%	21.6%	22.5%
NET INTEREST	$1,749	$1,665	$1,002	$1,173	$1,200
PRETAX PROFIT	$9,656	$13,681	$25,119	$34,937	$42,266
% Sales	10.3%	12.6%	20.0%	22.4%	23.2%
TAX PROVISION	$2,930	$4,103	$7,033	$9,782	$10,566
Tax rate	30.3%	30.0%	28.0%	28.0%	25.0%
ADJUSTED NET INCOME	$6,726	$9,578	$18,086	$25,155	$31,699
Net Margin	7.1%	8.9%	14.4%	16.1%	17.4%
AVE. DILUTED SHARES	28,991	29,478	31,667	33,189	34,125
EPS, ADJUSTED (1)	**$0.23**	**$0.32**	**$0.57**	**$0.76**	**$0.93**
EPS, GAAP	**$0.23**	**$0.32**	**$0.57**	**$0.76**	**$0.93**

(1) Adjusted EPS exclude amortization of deferred stock comp. and intangibles, and non-recurring gains and losses
See next page for reconciliation to GAAP
Source: SG Cowen & Co.

Power Integrations Quarterly Income Statement (Adjusted)

($000s)	2003				2004E				2005E			
Calendar Year-End	Q1	Q2	Q3	Q4	Q1	Q2E	Q3E	Q4E	Q1E	Q2E	Q3E	Q4E
REVENUE	$29,090	$29,800	$34,525	$32,291	$34,165	$36,050	$42,050	$44,050	$42,500	$43,500	$47,500	$49,000
% Change Y/Y	22.9%	9.8%	22.6%	10.6%	17.4%	21.0%	21.8%	36.4%	24.4%	20.7%	13.0%	11.2%
% Change Q/Q	-0.4%	2.4%	15.9%	-6.5%	5.8%	5.5%	16.6%	4.8%	-3.5%	2.4%	9.2%	3.2%
TOTAL COGS	$14,016	$14,670	$18,222	$15,906	$17,473	$19,467	$21,866	$22,906	$22,313	$22,838	$24,938	$25,480
GROSS PROFIT	$15,074	$15,130	$16,303	$16,385	$16,692	$16,583	$20,184	$21,144	$20,188	$20,663	$22,563	$23,520
Gross Margin	51.8%	50.8%	47.2%	50.7%	48.9%	46.0%	48.0%	48.0%	47.5%	47.5%	47.5%	48.0%
R&D	$4,084	$4,181	$4,287	$3,891	$4,152	$4,200	$4,300	$4,405	$4,463	$4,611	$4,560	$4,700
% Sales	14.0%	14.0%	12.4%	12.0%	12.2%	11.7%	10.2%	10.0%	10.5%	10.6%	9.6%	9.6%
Sales & marketing	$4,046	$3,919	$3,846	$3,673	$4,112	$4,150	$4,200	$4,317	$4,675	$4,785	$4,845	$5,050
% Sales	13.9%	13.2%	11.1%	11.4%	12.0%	11.5%	10.0%	9.8%	11.0%	11.0%	10.2%	10.3%
G&A	$1,627	$1,804	$1,701	$1,716	$1,579	$1,730	$1,800	$1,894	$1,913	$2,045	$2,090	$2,130
% Sales	5.6%	6.1%	4.9%	5.3%	4.6%	4.8%	4.3%	4.3%	4.5%	4.7%	4.4%	4.3%
OPEX	$9,757	$9,904	$9,834	$9,280	$9,843	$10,080	$10,300	$10,616	$11,051	$11,441	$11,495	$11,880
OPERATING PROFIT	$5,317	$5,226	$6,469	$7,105	$6,849	$6,503	$9,884	$10,528	$9,137	$9,222	$11,068	$11,640
Operating Margin	18.3%	17.5%	18.7%	22.0%	20.0%	18.0%	23.5%	23.9%	21.5%	21.2%	23.3%	23.8%
NET INTEREST	$269	$387	$129	$217	$259	$414	$250	$250	$250	$300	$300	$350
PRETAX PROFIT	$5,586	$5,613	$6,598	$7,322	$7,108	$6,917	$10,134	$10,778	$9,387	$9,522	$11,368	$11,990
% Sales	19.2%	18.8%	19.1%	22.7%	20.8%	19.2%	24.1%	24.5%	22.1%	21.9%	23.9%	24.5%
TAX PROVISION	$1,676	$1,460	$1,847	$2,050	$1,990	$1,937	$2,838	$3,018	$2,347	$2,380	$2,842	$2,998
Tax rate	30.0%	26.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	25.0%	25.0%	25.0%	25.0%
NET INCOME	$3,910	$4,153	$4,751	$5,272	$5,118	$4,980	$7,296	$7,760	$7,040	$7,141	$8,526	$8,993
Net Margin	13.4%	13.9%	13.8%	16.3%	15.0%	13.8%	17.4%	17.6%	16.6%	16.4%	17.9%	18.4%
DILUTED SHARES (mil.)	30,438	31,060	32,153	33,016	32,757	33,000	33,500	33,500	33,500	34,000	34,500	34,500
EPS, ADJUSTED (1)	$0.13	$0.13	$0.15	$0.16	$0.16	$0.15	$0.22	$0.23	$0.21	$0.21	$0.25	$0.26
EPS, GAAP	$0.13	$0.13	$0.15	$0.16	$0.16	$0.15	$0.22	$0.23	$0.21	$0.21	$0.25	$0.26
ANNUAL VALUES:				2003				2004				2005
REVENUE				$125,706				$156,315				$182,500
GROWTH Y/Y				16.2%				24.3%				16.8%
EPS, ADJUSTED (1)				$0.57				$0.76				$0.93
EPS, GAAP				$0.57				$0.76				$0.93

(1) Adjusted EPS excludes amortization of deferred stock comp and intangibles, and non-recurring gains and losses

Source: SG Cowen & Co.

Power Integrations Reconciliation of Adjusted Net Income to GAAP Net Income

	2001	2002	2003	Q1-A	Q2-E	Q3-E	Q4-E	2004E	2005E
Adjusted Net Income (1)	$6,726	$9,578	$18,086	$5,118	$4,980	$7,296	$7,760	$25,155	$31,699
Amortization	-	-	-	-	-	-	-	-	-
Gains/losses on Investments	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Net Income, GAAP	$6,726	$9,578	$18,086	$5,118	$4,980	$7,296	$7,760	$25,155	$31,699
Adjusted share count									
GAAP share count	28,991	29,478	31,667	32,757	33,000	33,500	33,500		
EPS, GAAP	$0.23	$0.32	$0.57	$0.16	$0.15	$0.22	$0.23	$0.76	$0.93

(1) Adjusted net income excludes amortization of deferred stock comp. and intangibles, and non-recurring gains and losses

Source: SG Cowen & Co.

Power Integrations Statement of Cash Flows

($000s)	2001	2002	2003	Q1-A	Q2-E	Q3-E	Q4-E	2004E	2005E
Net income (loss)	$6,726	$9,578	$18,086	$5,118	$4,980	$7,296	$7,760	$25,155	$31,699
Adjustments to reconcile net income (loss) to cash provided by operating activities:									
Depreciation and amortization	6,944	6,684	6,846	1,783	1,803	2,103	2,203	7,891	9,125
Amortization of deferred compensation	41	147	135	13	-	-	-	13	-
Deferred income taxes	708	(718)	191	-	-	-	-	-	-
Deferred rent	441	284	(725)	-	-	-	-	-	-
Provision for A/R and other allowances	1,119	155	688	160	-	-	-	160	-
Tax benefit associated with employee stock plans	2,232	1,654	6,841	1,372	-	-	-	1,372	-
Changes in operating assets and liabilities:								-	-
Accounts receivable	2,946	(3,553)	(2,492)	(3,124)	(1)	(2,212)	(737)	(6,075)	(320)
Inventories	(2,023)	8,594	(8,085)	1,793	1,583	(2,432)	1,526	2,469	(23)
Deferred income Taxes	-	-	-	-	(236)	(751)	(250)	(1,237)	(619)
Prepaid expenses and other current assets	3,092	(146)	(2,909)	(252)	(166)	(530)	(177)	(1,125)	(437)
Accounts payables	(2,849)	3,086	191	(1,231)	1,208	973	422	1,372	1,044
Accrued Payroll and employee benefits	-	-	-	-	194	618	206	1,018	510
Taxes payable and other accrued	(2,386)	4,849	1,773	(1,407)	276	877	292	38	724
Deferred income on shipments to distributors	(768)	920	(153)	908	192	610	203	1,913	503
Cash provided by (used in) operating activities	$16,223	$31,534	$20,387	$5,133	$9,831	$6,552	$11,448	$32,964	$42,205
Cash flow from investing activities:									
Capital expenditures	(7,629)	(4,510)	(37,787)	(1,353)	(1,803)	(2,103)	(2,203)	(7,461)	(9,125)
Purchases of securities	(30,750)	(42,325)	(6,210)	(14,620)	-	-	-	(14,620)	-
Sales and maturities of securities	42,998	25,173	33,037	7,265	-	-	-	7,265	-
Cash provided by (used in) investing activities	$4,619	($21,662)	($10,960)	($8,708)	($1,803)	($2,103)	($2,203)	($14,816)	($9,125)
Cash flow from financing activities:									
Payments related to capital lease	(678)	(441)	(233)	(41)	-	-	-	(41)	-
Proceeds receivable from stockholders	38	38	-	-	-	-	-	-	-
Proceeds from issuance of common stock	5,477	5,914	23,554	4,393	-	-	-	4,393	-
Cash provided by (used in) financing activities	$4,837	$5,511	$23,321	$4,352	$0	$0	$0	$4,352	$0
Net change in cash and cash equivalents	$25,679	$15,383	$32,748	$777	$8,029	$4,449	$9,245	$22,500	$33,080

Source: Company filings and SG Cowen estimates

SG Cowen Cash Flow Summary And Analysis	2001	2002	2003	Q1-A	Q2-E	Q3-E	Q4-E	2004E	2005E
Cash flow from operations	16,223	31,534	20,387	5,133	9,831	6,552	11,448	32,964	42,205
minus net capital expenditures equals	(7,629)	(4,510)	(37,787)	(1,353)	(1,803)	(2,103)	(2,203)	(7,461)	(9,125)
Owners' cash flow (1)	$8,594	$27,024	($17,400)	$3,780	$8,029	$4,449	$9,245	$25,503	$33,080
Investing adjustments	12,248	(17,152)	26,827	(7,355)	-	-	-	(7,355)	-
Financing adjustments	(7,411)	22,663	(3,507)	11,707	-	-	-	11,707	-
Net change in cash, cash equivalents, and securities	$13,431	$32,535	$5,920	$8,132	$8,029	$4,449	$9,245	$29,855	$33,080
Beginning cash, cash equivalents, and securities	$63,434	$76,865	$109,400	$115,320	$123,452	$131,481	$135,930	$115,320	$145,175
Ending cash, cash equivalents, and securities	$76,865	$109,400	$115,320	$123,452	$131,481	$135,930	$145,175	$145,175	$178,255

(1) Owner's cash flow in 2003 includes an approximately $30M CAPEX expenditure related to the purchase of the Company's San Jose facility. Absent this expenditure, Owner's cash flow in 2003 would have been approximately $13M.

Source: SG Cowen & Co.

Power Integrations Balance Sheet

($000s)	2001 Q4	2002 Q4	2003 Q4	Q1-A	Q2-E	Q3-E	2004E Q4-E	2005E Q4-E
Cash, cash equivalents, and securities	76,865	109,400	115,320	123,452	$131,481	135,930	145,175	178,255
Accounts receivable, net	5,124	8,522	10,326	13,290	13,291	15,503	16,241	16,560
Inventories, net	23,622	15,028	23,113	21,320	19,737	22,170	20,644	20,667
Deferred income taxes	5,346	6,064	4,275	4,275	4,511	5,262	5,512	6,131
Prepaid expenses and other current assets	1,526	1,672	3,086	3,017	3,183	3,713	3,890	4,327
Total current assets	$112,483	$140,686	$156,120	$165,354	$172,203	$182,578	$191,461	$225,941
Property, plant and equipment, net	23,182	21,008	51,949	51,600	51,600	51,600	51,600	51,600
Intangible assets	-	-	-	-	-	-	-	-
Deferred tax assets	-	-	1,598	1,598	-	-	-	-
Other assets, net	-	-	1,495	1,735	1,831	2,135	2,237	2,488
Total assets	$135,665	$161,694	$211,162	$220,287	$225,634	$236,313	$245,298	$280,029
Accounts payable	4,641	7,727	7,918	6,687	7,895	8,868	9,290	10,334
Accrued salaries and employee benefits	3,164	4,389	5,310	3,518	3,712	4,330	4,536	5,046
Income taxes payable and other accrued	1,604	5,228	4,610	4,995	5,271	6,148	6,440	7,164
Current portion of capitalized lease	440	233	41	-	-	-	-	-
Deferred income on shipments to distributors	1,798	2,718	2,565	3,473	3,665	4,275	4,478	4,981
Total current liabilities	$11,647	$20,295	$20,444	$18,673	$20,542	$23,620	$24,744	$27,524
Other liabilities	-	-	-	-	-	-	-	-
Capital lease and deferred rent liability	716	766	-	-	-	-	-	-
Total liabilities	$12,363	$21,061	$20,444	$18,673	$20,542	$23,620	$24,744	$27,524
Total stockholders' equity	$123,302	$140,633	$190,718	$201,614	$205,092	$212,693	$220,555	$252,505
Total liabilities and stockholders' equity	$135,665	$161,694	$211,162	220,287	225,634	$236,313	$245,298	$280,029

Source: SG Cowen & Co.

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Power Integrations Return on Invested Capital

$000s	2001	2002	2003	2004E	2005E
Adjusted EBIT:	$7,907	$12,016	$24,117	$40,839	$45,867
+Implied interest from operating leases	1,700	2,200	1,200	-	-
+Increase in LIFO reserve	-	-	-	-	-
+Increase in bad debt reserve	-	-	-	-	-
+Increase in net capitalized R&D	-	-	-	-	-
Amortization (adjusted EBIT excludes amortization)	-	-	-	-	-
Adjusted Operating Profit Before Taxes	$9,607	$14,216	$25,317	$40,839	$45,867
Income tax expense:	$2,930	$4,103	$7,033	$9,782	$10,566
- Increase in deferred tax liabilities	-	-	-	-	-
+ Increase in deferred tax assets	-	-	-	-	-
+ Tax benefit from interest expense	-	-	-	-	-
-Tax expense from interest income	(612)	(583)	(351)	(411)	(420)
-Taxes on non-operating income	-	-	-	-	-
+ Tax benefits from interest on leases	595	770	420	-	-
Cash Operating Taxes	$2,913	$4,290	$7,102	$9,372	$10,146
NOPAT	$6,694	$9,926	$18,215	$31,467	$35,721
Book value of common equity	$123,302	$140,633	$190,718	$220,555	$252,505
+Preferred stock	-	-	-	-	-
+Minority interest	-	-	-	-	-
+Deferred tax liabilities	-	-	-	-	-
+LIFO reserve	-	-	-	-	-
+Accumulated amortization expense	-	-	-	-	-
+Interest-bearing short-term debt	-	-	-	-	-
+Long-term debt	-	-	-	-	-
+Capitalized lease obligations	-	-	-	-	-
+PV of operating leases (1)	24,286	31,429	17,143	-	-
-Excess cash, cash equivalents & securities	(52,894)	(98,409)	(94,964)	(123,633)	(158,094)
-Deferred tax assets	-	-	-	-	-
Invested Capital	$94,694	$73,653	$112,897	$96,922	$94,411
Return On Invested Capital	7.1%	13.5%	16.1%	32.5%	37.8%
-Goodwill, net	-	-	-	-	-
-Intangible assets, net	-	-	-	-	-
Return On Invested Capital, ex. GW + Intang.	7.1%	13.5%	16.1%	32.5%	37.8%

Invested Capital:	2001	2002	2003	2004E	2005E
Working capital, excl. cash, cash equivalents & securities	23,971	10,991	20,356	21,543	20,162
Cash, cash equivalents & securities	76,865	109,400	115,320	145,175	178,255
Excess cash, cash equivalents & securities	$52,894	$98,409	$94,964	$123,633	$158,094

EBIT = Earnings Before Taxes and Interest
NOPAT = Net Operating Profit After Tax
ROIC = Return On Invested Capital

(1) The company purchased its primary facility in 2003, eliminating lease obligations.
Source: SG Cowen & Co.

Power Integrations Ratio Analysis

FY Ends December	2001	2002	2003	2004E	2005E
Per Share:					
Cash flow from operations	$0.56	$1.07	$0.64	$0.99	$1.24
Cash, cash equivalents, and securities	$2.65	$3.71	$3.64	$4.37	$5.22
Book value	$4.25	$4.77	$6.02	$6.65	$7.40
Tangible book value	$4.25	$4.77	$6.02	$6.65	$7.40
Liquidity Ratios:					
Current ratio	9.7	6.9	7.6	7.7	8.2
Quick ratio	7.6	6.2	6.5	6.9	7.5
Leverage:					
Cash to equity	62.3%	77.8%	60.5%	65.8%	70.6%
Assets to equity	110.0%	115.0%	110.7%	111.2%	110.9%
Assets to equity (excl. cash)	126.6%	167.4%	127.1%	132.8%	137.1%
Turnover:					
Asset turnover	0.7x	0.7x	0.6x	0.6x	0.7x
Asset turnover, excluding cash	1.6x	2.1x	1.3x	1.6x	1.8x
Accounts receivable turnover	18.4x	12.7x	12.2x	9.6x	11.0x
Inventory turnover	2.2x	4.0x	2.7x	4.0x	4.6x
Accounts payable turnover	11.0x	7.9x	7.9x	8.8x	9.2x
Cash Conversion Cycle:					
Days sales outstanding	20	29	30	38	33
Days inventory	168	90	134	92	79
Days payable	33	46	46	41	39
Cash conversion cycle (days)	155	73	118	89	73
Pre-Tax Return On Assets:					
Operating margin (EBIT/Sales)	8.4%	11.1%	19.2%	21.6%	22.5%
x Asset turnover (Sales/Assets)	0.7x	0.7x	0.6x	0.6x	0.7x
= **Pre-Tax ROA**	**5.8%**	**7.4%**	**11.4%**	**13.8%**	**14.7%**
x Tax burden (NI/EBT)	70%	70%	72%	72%	75%
= **Return On Assets**	**4.1%**	**5.2%**	**8.2%**	**9.9%**	**11.0%**
Pre-Tax Return On Assets (excl. cash):					
Operating margin (EBIT/Sales)	8.4%	11.1%	19.2%	21.6%	22.5%
x Asset turnover (Sales/Assets), excluding cash	1.6x	2.1x	1.3x	1.6x	1.8x
= **Pre-Tax ROA**	**13.4%**	**23.0%**	**25.2%**	**33.7%**	**40.3%**
x Tax burden (NI/EBT)	70%	70%	72%	72%	75%
= **Return On Assets, excluding cash**	**9.4%**	**16.1%**	**18.1%**	**24.3%**	**30.3%**
Return On Equity:					
x Operating margin (EBIT/Sales)	8.4%	11.1%	19.2%	21.6%	22.5%
x Interest benefit (EBT/EBIT)	122%	114%	104%	103%	103%
x Tax burden (NI/EBT)	70%	70%	72%	72%	75%
x Asset turnover (Sales/Assets)	0.7x	0.7x	0.6x	0.6x	0.7x
x Leverage (Assets/S.E.)	110%	115%	111%	111%	111%
= **ROE**	**-5.5%**	**-6.8%**	**9.5%**	**11.4%**	**12.6%**

Source: SG Cowen & Co.

Appendix A

Why Fabless Mixed-Signal IC Companies Deserve Investors' Attention

Considering the multitude of investment opportunities available in the global capital markets, the first investment selection task often involves screening for companies that demonstrate generally accepted drivers of share value—revenue growth, cash generation, margin expansion, and high returns on invested capital. As a subset within the larger semiconductor industry, companies principally focused on analog integrated circuits have "screened well" based on the aforementioned criteria. Companies such as Linear Technology, Maxim Integrated Products, and Analog Devices have become benchmarks for technology growth stocks. Several years ago, these companies rightly chose to address accelerating end-markets with proprietary design and process technology, deploying both manufacturing and human capital to service the marketplace. Today, these companies along with their vertically integrated peers spend billions of dollars annually on semiconductor capital equipment to maintain the manufacturing infrastructure necessary to produce proprietary, high-performance analog components and circuits.

In contrast to the high-performance chip companies that exploit extensive fixed assets and analog process know-how, there exists a class of semiconductor company that leverages both digital and analog circuit design expertise, software knowledge, and semiconductor intellectual property, done in such a manner that high performance products can be manufactured at any number of third-party fabrication facilities. These specialized design houses are called fabless companies, and they present a compelling business model that effectively competes with the largest vertically integrated firms in the world.

Historically, almost every semiconductor company was vertically integrated—the so-called integrated device manufacturer (IDM) model. The IDMs created value as a function of economies of scale in research and development and by minimizing frictional costs between the design and manufacturing stages. Because of lower unit volumes and a high reliance on proprietary fabrication processes, economies of scale in manufacturing were considered a beneficial, albeit non-vital feature of the business model. In this scenario, as unit demand grew, companies were faced with the decision to either add capital equipment or partner with competitors to augment manufacturing capacity. The latter case was less desirable, however, as there existed substantial intellectual property risk as well as uncertainty regarding the availability of fabrication resources (particularly in times of widespread demand growth). Also, the lack of common design platforms and electronic design automation (EDA) tools made porting a design from one company to another was an onerous task. As such, most semiconductor companies simply chose to sustain their own manufacturing.

By the late 1980s, several factors emerged that would be the genesis of a new type of semiconductor business model:

- The costs of IC production equipment skyrocketed because of increasingly complex and highly integrated chip designs that demanded more expensive, smaller process geometry equipment.
- The complementary metal oxide semiconductor (CMOS) process technology emerged as the dominant fabrication technology for ICs, principally due to its scalability.

- EDA tools became more standardized, which helped designers manage intellectual property in an object-oriented fashion, improving design re-use and portability.
- The demand for communications and multimedia devices grew exponentially. These devices require complicated interactions between the digital and analog world, and created a new class of mixed-signal IC (MSIC).
- The emergence of the pure-play foundry model was disruptive to the entire semiconductor industry. For the first time, scale manufacturing economies could be delivered in the production of disparate products using similar process technology, while servicing hundreds of customers.

These factors, together with a shift in relative importance from fabrication process technology toward system design resources and applied intellectual property, have given rise to the fabless chip design business model. Because these companies mostly leverage both analog and digital circuit design expertise (producing a mixed-signal product), we refer to this class of company as a fabless mixed-signal (FMS) business model.

Despite their generally smaller addressable markets, we prefer fabless MSIC companies to many other companies within the semiconductor industry. The strength of MSIC companies' product offerings is derived principally from the integration of analog and digital circuits on the same chip, which allows for a more functional and cost-effective solution. Also, FMS companies enjoy many of the desirable features attributable to the high-performance analog companies, while at the same time avoiding the shortcomings of their more digital-centric peers. Advantages of the FMS model include the following:

1. The FMS IC industry is not as capital- and fixed-cost-intensive as the IDM segment (both analog and digital), which oftendevelops more standardized products. Also, because FMS designs do not require extremely high levels of miniaturization relative to their digital counterparts, FMS IC fabrication can take place using older (trailing-edge), larger-geometry equipment. Similar-functionality MSICs may also be manufactured on different geometry platforms, allowing outsourced foundries increased flexibility. This leads to more favorable pricing and higher margins for FMS companies.
2. There is significant intellectual property protection in the MSIC market, and MSIC design expertise is scarce because of the high level of on-the-job training required. Rather than relying on process technology, a successful mixed signal product relies on expert analog and digital circuit design, high levels of systems integration, the development of complex, hardware-specific software, and an overall elegantly engineered solution.
3. Because of their higher levels of functionality, MSICs enjoy longer product cycles than less-integrated chips. MSICs can have product cycles of three to five years or more compared with one- to two-year digital IC product cycles. This is because once a particular MSIC is designed into an electronic device, significant reengineering is required to supplant existing chip content. This is especially true of proprietary MSICs, where pin configurations are product-specific.

Design: The Lifeblood of the Fabless Mixed-Signal IC Company

In the context of large, vertically integrated competitors such as Texas Instruments, Philips, and ST Microelectronics, one might imagine that small-capitalization semiconductor companies would be hard-pressed to survive, let alone deliver sustained growth. In many instances smaller companies struggle, particularly where the served markets are mature, or where the level of product integration is low. These conditions favor larger companies, where a global marketing footprint and considerable manufacturing scale deliver a competitive advantage. However, in niche markets that demand products with high levels of integration (which includes analog and digital functionality), coupled with substantial software support and total system expertise, an impressive number of smaller companies have discovered ways to succeed and thrive. What do these small companies have in common? They employ talented and experienced IC design and software engineers to develop mixed-signal chips using standard processes to realize the FMS semiconductor model. Engineers working for FMS firms are experts in one or more of the key IC design flow tasks outlined below.

Mixed-Signal Design Process

Mixed Signal Design Flow	Engineering Task
Design Specification and Analysis	IC Design Specification
	High-level Simulation
	Mixed Signal (Analog & Digital) Simulation
	Power Analysis
	Pure Analog Simulation
Design Optimization	Digital Logic Synthesis
	Chip Floor-planning
	Timing Synthesis
Design Verification	Gate Level Simulation (Digital)
	Gate Level Power Estimation
	Mixed Signal (Analog & Digital) Simulation
Physical Design and Layout	Timing Synthesis
	Digital Layout (placement, routing) & Optimization
	Analog Layout (placement, routing) & Optimization

Source: SG Cowen

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No two IC realization processes are exactly alike, however. The design flow of an MSIC begins with a specification and ends when the design is physically laid out. Key steps in the process include the following:

1. **Simulation:** Simulation is the modeling of an electronic circuit using computers. Designs are simulated at many levels of abstraction, including the system level, the gate level, or the transistor level. Simulation allows engineers to test designs without actually building them, thus accelerating development time. Analog simulation is often more complex than digital simulation because it includes representations of the actual circuit voltages, currents, and component values instead of simplified digital state (1s and 0s) representations.
2. **Synthesis:** Synthesis is the process, again using computers, of automatically transforming a circuit description from a higher level of abstraction to a lower level, ultimately toward some physical implementation. Said another way, synthesis is to hardware design what compilation is to software development. Synthesis is well established in the digital realm, however, for mixed-signal circuits it has limited presence. This is illustrative of the "art" required in successful and efficient analog design.
3. **Optimization:** As the name implies, optimization is the process of using computer-aided tools, as well as bottom-up, manual, iterative steps, to optimize the design and layout of an MSIC. Unfortunately in analog design, optimization always involves less automated efforts.
4. **Layout:** Layout is the process of planning and implementing the location of devices within a chip, and includes floorplanning, placement, and routing. Floorplanning tools are generally focused on digital designs, and are poorly equipped to tackle mixed-signal issues such as noise and signal integrity. Art is once-more required here for success, to accurately account for the interactions between chip blocks and to compensate for the effects of intermodulation, cross talk, and substrate noise. Successful floor planning enables layouts that are efficient from both a timing and integration density standpoint, which greatly enhances the feature set of an MSIC.
5. **Verification:** In IC design, verification means confirmation that one or more predetermined specifications are met. It is essentially the task of establishing the correctness of a design using EDA tools to check the timing, connections, and rules used to design the circuit.

In MSICs, the physical implementation often dominates circuit performance; as such electronic circuit design and physical layout issues must be considered together. Here, the physical design is intertwined with circuit design, and iterative optimization is the go-between. Complicating matters is that the physical implementation is subject to frequent extraction (the calculation of changing electrical parameters as physical parameters are altered), as well as incremental modifications to meet shifting customer needs. These design flow setbacks are characteristic of highly integrated mixed-signal circuit development, and account for a significant portion of an IC's time to market.

We articulate the above process in some detail because, more than any other features of the FMS industry, it determines the two most important drivers of fabless semiconductor company performance: productivity and time-to-market.

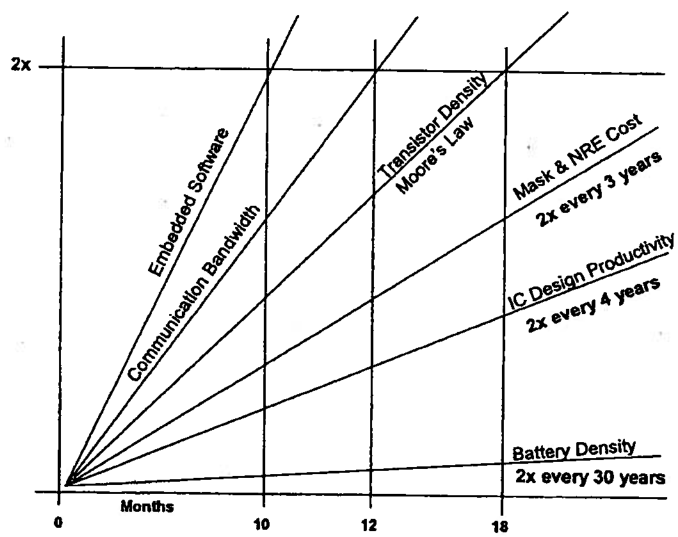
The IC Design Productivity Gap

According to the 2003 International Technology Roadmap for Semiconductors, "to avoid exponentially increasing design costs, the overall productivity of designed functions on a chip must scale at greater than two times per node (two times per manufacturing generation). Also, the reuse productivity of design, verification, and test must scale at greater than two times per node". If these comments turn out to be true (and we believe they will), successful FMS companies must find ways to realize the following:

- Improved and more efficient mixed-signal verification methods. MS verification is a serious design obstacle that has reached a crisis level.
- Superior embedded software design methods. The development of high-quality embedded software has emerged as the most critical challenge to mixed-signal productivity.
- The adoption and efficient utilization of automated methods (EDA tools) for mixed-signal design and test.

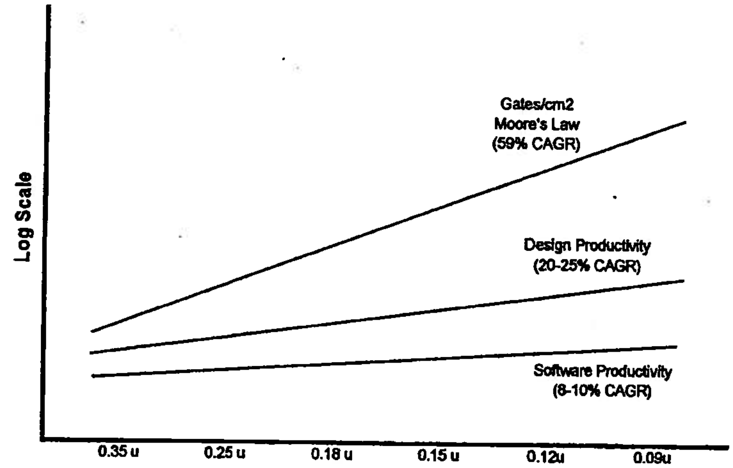
Along with the efficient use of existing intellectual property (via licensing or reuse), as well as the ongoing creation of new IP, we believe that the above factors will distinguish the leading companies from the laggards in the years to come.

The chart below shows that vital chip features such as embedded software complexity and transistor density double every 10 months and 18 months, respectively. However, IC design productivity, defined as the effective exploitation of available manufacturing technology, is doubling about every four years. Said another way, the ability to design transistors on a chip has grown by 20-25% compounded annually over the past two decades, whereas absolute logic chip density has grown by 55-60% compounded annually over the same period. Hence, there is a substantial gap between what is designable and what is manufacturable.



Source: SG Cowen, ST Microelectronics, MorphICs, Dataquest, eASIC

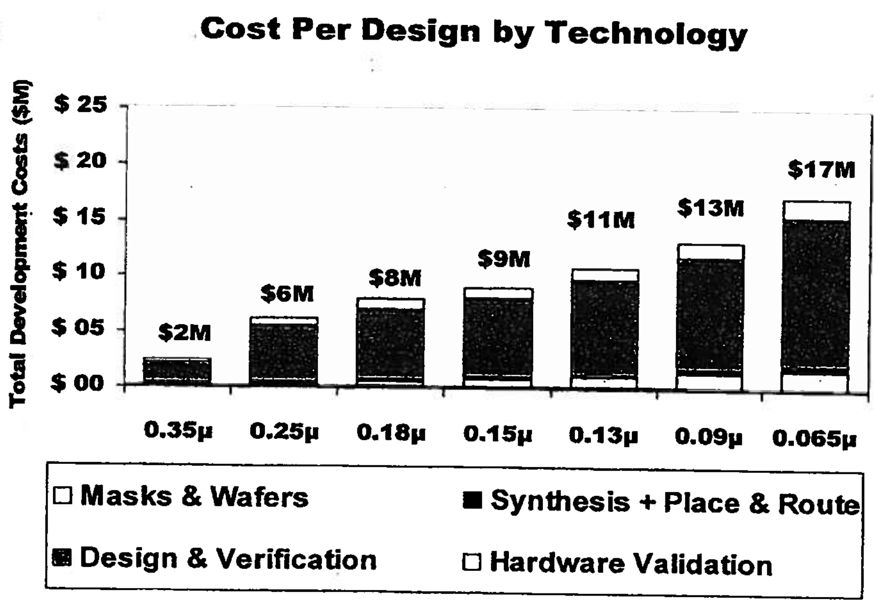
The Growing Design Productivity Gap



Growing gap between what's designable and what's manufacturable.
SoCs are system solutions – combinations of hardware and software.

Source: SG Cowen & Co., VSI Alliance

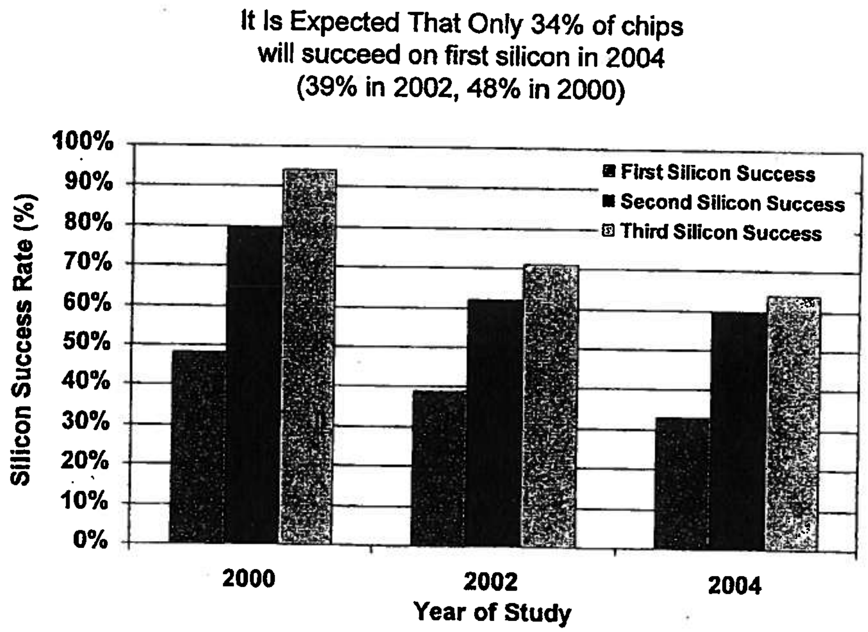
Verification Dominates Chip Design Costs, Especially At Smaller Geometries



Source: SG Cowen & Co., FSA

In sum, companies that make use of design tools and manufacturing trends the most quickly and use the fewest resources (i.e., demonstrate the highest productivity), will garner more than their "fair share" of available market opportunities while keeping design costs in check. In this scenario, chip design costs are naturally reduced because they are directly proportional to engineer labor unit costs (salary per engineer per year) and total IC complexity (i.e., the number of transistors per chip), and inversely proportional to designer productivity (measured by the number of transistors one engineer can design per year). As a point of reference, according to the International Technology Roadmap for Semiconductors (ITRS), one engineer could design a total of 125K gates (four transistors per gate) in 2003. This is up from 56K gates per engineer per year in 1999. Also, owing to surging chip complexity, the rate of success of first silicon (i.e.-getting it right the first time), is expected to continue to decline. Only augmented productivity can offset this negative trend.

Declining Rate of Success of First Silicon



Source: SG Cowen & Co.

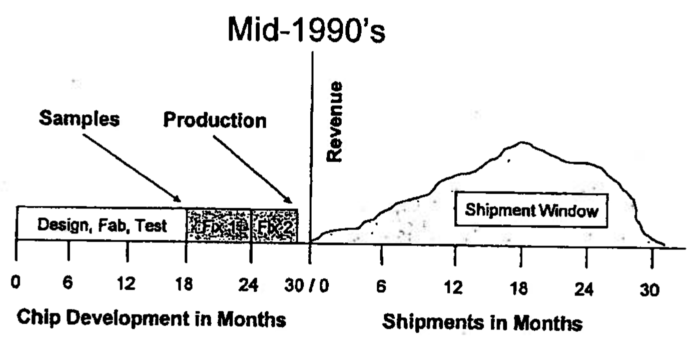
The Importance of Time-to-Market

Common sense suggests that product time-to-market is a distinguishing factor that separates more successful companies from less successful ones, but what may not be evident is that the penalty for being late to market has grown dramatically over the past ten-plus years.

The exhibit below depicts the chip development cycle in the 1990s. Chip production/shipments occurred about 30 months after the initiation of the IC design cycle, and products had a revenue lifetime of about the same duration or longer. In this scenario, if a company was six months late to market (i.e., six months behind a first-to-market competitor with a similar product), the company would expect to lose about one-third of its available profit for that particular design.

1990's Competitive Scenario

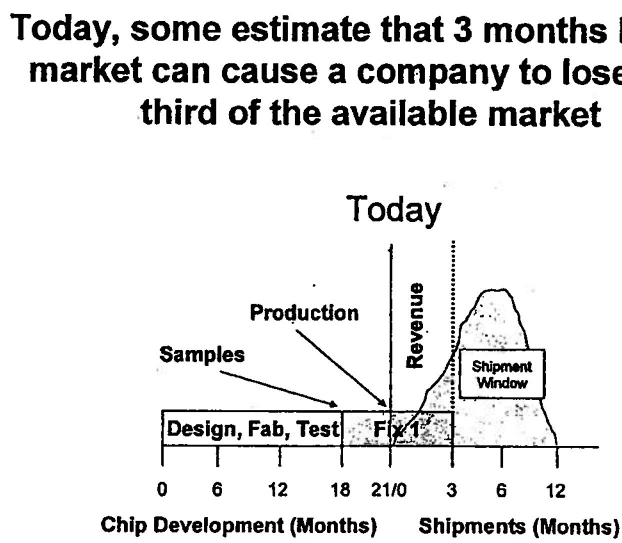
In the Mid-1990's, 6 months late-to-market cost a chip company one-third of its available market profit



Source: SG Cowen, Clark & Wheelwright, Matsumoto

In contrast to the 1990s, the current competitive landscape is much more hostile, particularly as it relates to MSICs for consumer electronics applications. As the figure below shows, the current time-to-production window has contracted dramatically, where shipments often occur before all chip flaws have been discovered or repaired. Also, given the much faster product cycles associated with today's consumer electronics, the available revenue window is substantially compressed. In this hyper-competitive scenario, if a company is three months late in a fast-moving market, the latecomer can lose one-third of its total revenue opportunity, with an increasing proportion of profit loss due to price declines occurring sooner in the cycle. This also takes into account the opportunity revenue loss from engineers that are unable to work on new products.

Existing Hyper-Competitive Market Scenario



Source: SG Cowen, Clark & Wheelwright, Matsumoto

Appendix B

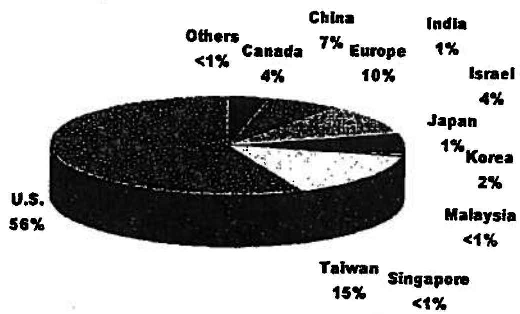
The Fabless Semiconductor Industry at a Glance

Although the target end-markets are very diverse, there are many common characteristics among fabless semiconductor companies. They each derive strength from intellectual property, design expertise (productivity), and fast time-to-market, and most fabless shops generally possess the nimbleness to quickly abandon projects when income prospects are diminished (the so-called fast-fail approach).

According to the Fabless Semiconductor Association (FSA), Q1:04 revenues for public fabless companies grew by 37% Y/Y to $8.2 billion. U.S. companies made up 76% of March quarter revenue, followed by Taiwan with 20%. China and Europe each made up about 2% of industry revenue. We estimate that in 2003, fabless industry revenue (public and private) was about $22.5 billion, up 21% Y/Y. The following graphics portray several key attributes of the fabless semiconductor industry.

The majority of fabless semiconductor companies are located in the U.S., with Taiwan a distant second. We believe this is a result of the established U.S. venture capital industry, among other factors. In recent years, countries such as Israel, which provide favorable government subsidies, have embraced the fabless model.

Geographic Location of Fabless Semiconductor Companies Worldwide



Source: FSA, SG Cowen & Co.

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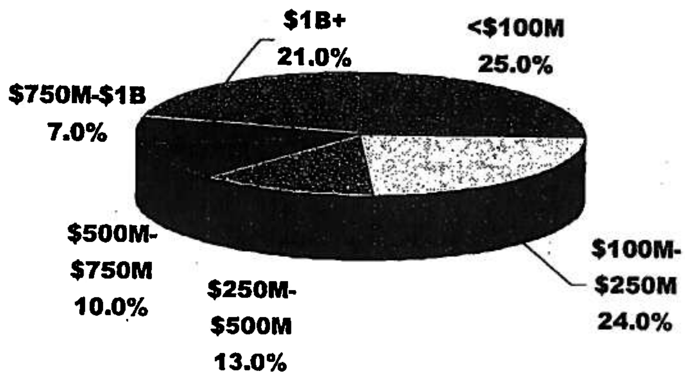
SG
Cowen & Co.

Most fabless semiconductor companies have small-capitalizations. They generally have only a few product lines and are highly concentrated in certain vertical markets. There are many broad-line fabless semiconductor companies, however, such as Xilinx, Broadcom, Altera, and Agere.

Fabless Semiconductor Companies by Market Cap (approx 50% < $250MM)



Source: FSA, SG Cowen & Co.

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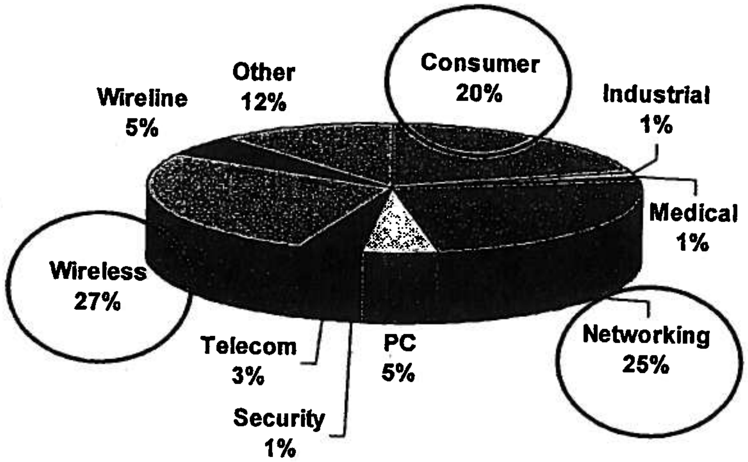
Q1 2004 Largest Fabless Companies By Revenue (Fabless Semi Association)

Rank	Company	Stock Exchange	Ticker	Q1 2004 (CY) Revenue ($000)
1	QUALCOMM (QCT Division)	NASDAQ	QCOM	$711,257
2	Broadcom	NASDAQ	BRCM	$573,406
3	NVIDIA Corporation	NASDAQ	NVDA	$471,905
4	ATI Technologies	NASDAQ	ATYT	$463,337
5	Agere	NYSE	AGRa	$462,000
6	Xilinx, Inc.	NASDAQ	XLNX	$403,380
7	SanDisk Corporation	NASDAQ	SNDK	$386,930
8	MediaTek Incorporation	Taiwan	2454	$285,290
9	Marvell Technology Group	NASDAQ	MRVL	$269,577
10	Conexant Systems	NASDAQ	CNXT	$243,781
11	Altera	NASDAQ	ALTR	$242,908
12	A-DATA	Taiwan	3260	$159,699
13	VIA Technologies, Inc.	Taiwan	2388	$131,412
14	QLogic Corporation	NASDAQ	QLGC	$128,294
15	Adaptec, Inc.	NASDAQ	ADPT	$121,280
16	Aeroflex UTMC Microelectronics	NASDAQ	ARXX	$116,846
17	NovaTek	Taiwan	3034	$114,196
18	Silicon Laboratories	NASDAQ	SLAB	$113,623
19	Sunplus Technology Company	Taiwan	2401	$108,345
20	Silicon Storage Technology, Inc. (SST)	NASDAQ	SSTI	$104,433
Other notable fabless companies not on this list include Realtek, Genesis Microchip, ICS, PMC-Sierra, Zoran, SMSC, Lattice, Zarlink, Ali, Cirrus Logic, ESS, Semtech, Power Integrations, O2Micro, and DSP Group.				

Source: FSA, SG Cowen & Co.

Fabless semiconductor companies are principally focused on three segments of the marketplace—consumer, wireless, and networking.

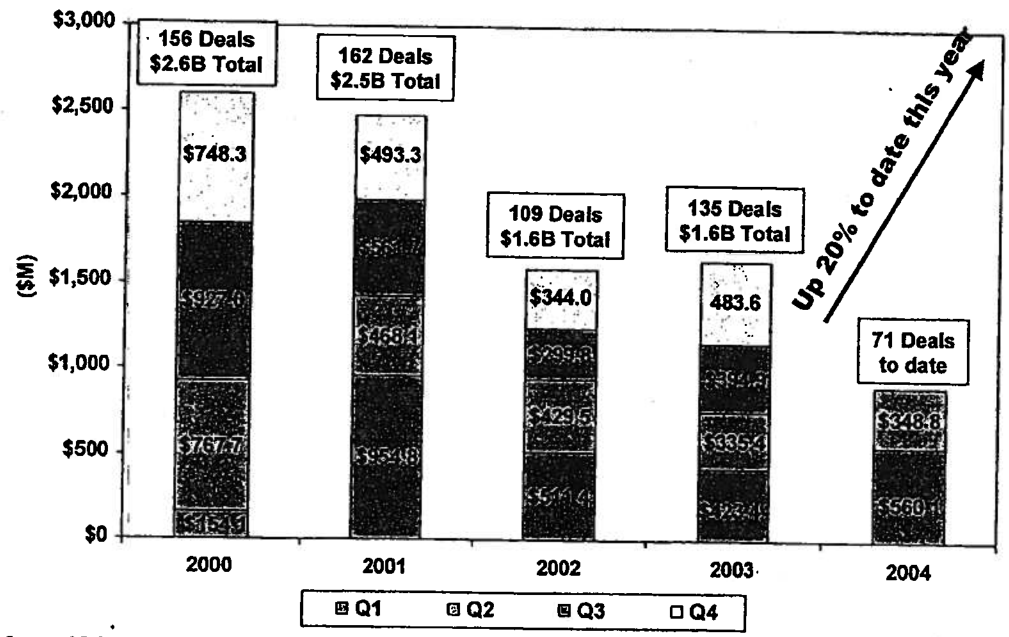
Fabless Semiconductor Industry Product-Market Focus



Source: FSA, SG Cowen & Co.

In Q1:04, there were 19 mergers or acquisitions of fabless companies, totaling $1.5 billion. This marked the highest level of activity since the peak of the bubble (Q1:00), when there were 20 deals worth $5.5 billion. The IPO outlook is also much more positive according the FSA, with 18 fabless companies involved in IPOs in Q1:04 vs. none in Q1:03.

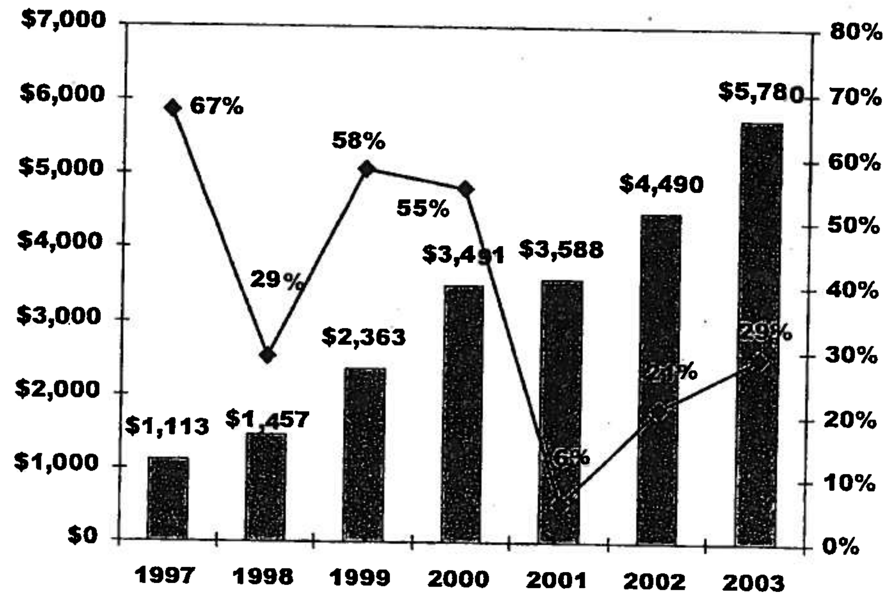
Fabless Deals Reached an Inflection in 2003 and Are Accelerating in 2004



Source: SG Cowen & Co.

Taiwan is becoming a more significant player in the fabless industry. We also believe that Taiwanese companies are interested in deploying additional resources toward the design and development of mixed-signal and SoC devices.

Fabless Taiwanese Company Revenue and Yr./Yr. Growth



Source: FSA, SG Cowen & Co.

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SG COWEN & CO. RATING DEFINITIONS PRIOR TO 3/1/2004

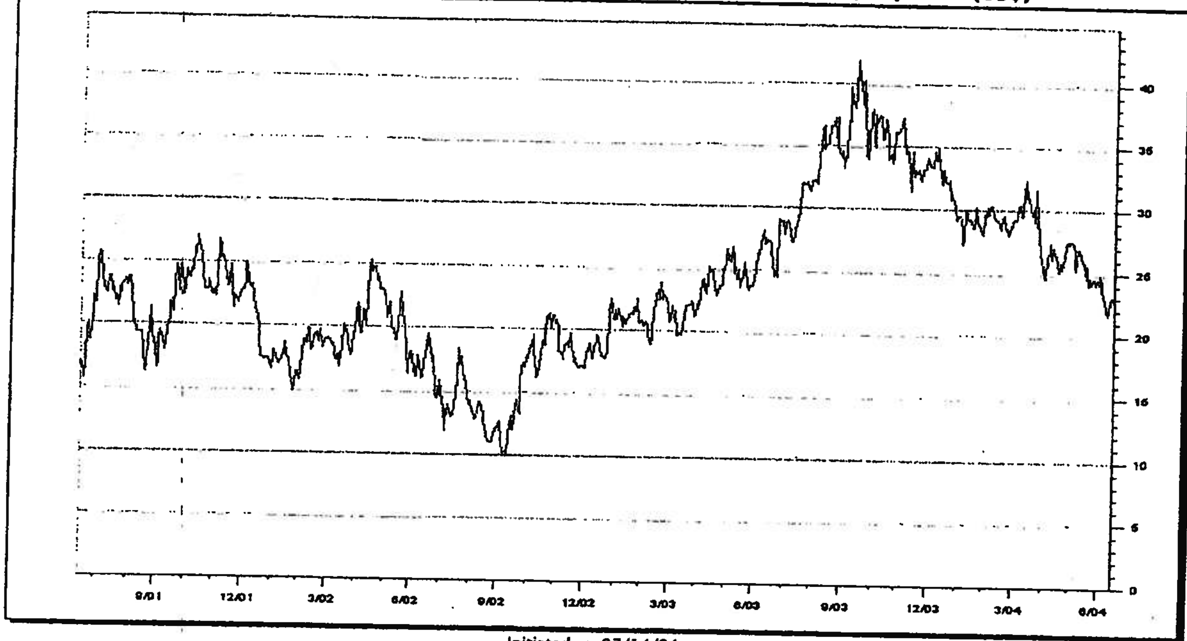
Rating	Definition
Strong Buy (1)	Stock expected to outperform the S&P 500 by over 25%
Outperform (2)	Stock expected to outperform the S&P 500 by 10-25%
Market Perform (3)	Stock expected to out/underperform the S&P 500 by +/-10%
Underperform (4)	Stock expected to underperform the S&P 500 by at least 10%

Assumptions: Time horizon is 12 months; S&P 500 is flat over forecast period.

SG COWEN & CO. RATING DEFINITIONS PRIOR TO 9/9/2002

Rating	Definition
Strong Buy (1)	Analyst expects the stock to outperform the market over the next 6-12 months
Buy (2)	Analyst expects the stock to outperform the market over the next 12-18 months
Neutral (3)	Analyst expects the stock to perform in line with the market over the next 12 months
Underperform (4)	Analyst expects the stock to underperform the market over the next 12 months

POWI—SG COWEN & CO. HISTORICAL PRICE CHART AS OF 07/13/2004 (US$)



Initiated on 07/14/04;
SG Cowen & Co., LLC eliminated price targets on 09/09/02;
SG Cowen & Co., LLC eliminated investment ratings on 03/01/04.